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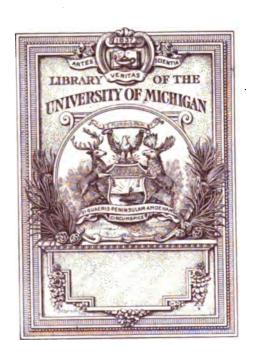
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THE GIFT OF Indiana st. lib.



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TWENTY-FIFTH ANNUAL REPORT

OF THE

State Board of Health of Indiana

FOR THE

Fiscal Year Ending October 31, 1906. Statistical Year Ending December 31, 1906.

TO THE GOVERNOR.

INDIANAPOLIS:
WM. B. BURFORD, CONTRACTOR FOR STATE PRINTING AND BINDING.
1907

THE STATE OF INDIANA, EXECUTIVE DEPARTMENT, November 20, 1906.

Received by the Governor, examined and referred to the Auditor of State for verification of the financial statement.

OFFICE OF AUDITOR OF STATE, INDIANAPOLIS, November 28, 1906.

The within report, so far as the same relates to moneys drawn from the State Treasury, has been examined and found correct.

J. C. BILLHEIMER,

Auditor of State.

November 28, 1906.

Returned by the Auditor of State, with above certificate, and transmitted to Secretary of State for publication, upon the order of the Board of Commissioners of Public Printing and Binding.

FRED L. GEMMER.

Secretary to the Governor.

Filed in the office of the Secretary of State of the State of Indiana, November 28, 1906.

FRED A. SIMS,

Secretary of State.

Received the within report and delivered to the printer November 28, 1906,

HARRY SLOUGH,

Clerk Printing Bureau.

MEMBERS OF THE BOARD.

T. HENRY DAVIS, M. D., President	Richmond.
GEO. T. McCoy, M. D., Vice-President	Columbus.
W. N. WISHARD, M. D	Indianapolis.
F. A. Tucker, M. D	Noblesville
J. N. HURTY, M. D., Phar. D., Secretary	

TWENTY-FIFTH ANNUAL REPORT

OF THE

Indiana State Board of Health.

HON. J. FRANK HANLY, Governor of Indiana:

The State Board of Health presents herewith its twenty-fifth annual report.

There is reported herein the transactions and work of the Board, an account of expenditures for the year ending October 31, 1906, and a report of the work of the State Laboratory of Hygiene, which is a department of the Board. The report also contains the vital statistics for the calendar year.

TRANSACTIONS AND WORK OF THE BOARD.

The State Board of Health now exists and acts under the health law passed in 1891. There are five members, four being appointed by an appointing board composed of the Governor, the Secretary of State, and the Auditor. These four members appoint a secretary, who thereupon becomes a member of the Board. All members serve for four years.

Quarterly meetings shall be held, and the Board may hold as many special meetings as may seem to it proper. During this year four regular and four special meetings were held, the minutes of which fully set forth the work done.

The quarterly reports of the secretary presented at the regular quarterly meetings give specific accounts of his office and field work. It will be noted that visits are made from time to time by the secretary to different parts of the State. The reasons for making the same, and the results accomplished, are given in detail in his reports. It is believed that these visits are of benefit to the health cause, for the people so assert in letters and com-

munications to the press, and medical and local societies, and teachers' and farmers' institutes which have been addressed, have always passed resolutions of thanks for the advice given and services rendered. A further reason for believing that visits made by the secretary are profitable and of advantage to the people lies in the fact that one hundred and sixty-seven requests were received from various parts of the State for inspection of sanitary conditions and advice concerning the same. The requests came from the governing authorities of counties, cities and towns, from school authorities and private citizens.

VITAL STATISTICS.

The vital statistics are collected for the calendar year. They, therefore, can not be presented until after December 31. After all reports are received it will require about ninety days to arrange, tabulate and analyze the data. The mortality statistics are accurate, but the birth and disease statistics are inaccurate. This condition is explained and a remedy recommended in another place in this report. Original certificates of death are received at this office, and carefully arranged and indexed, and citizens may consult the same and secure transcripts without fee. There is an average of 17 applications per week for transcripts of death records. The sanitary usefulness of death records is applied immediately upon receipt of the same.

EPIDEMICS.

No widespread epidemics are recorded, but, of course, there were a number of local epidemics. The same are specifically set forth in the special report on vital statistics.

Smallpox existed every month in the year, but it has been in mild form and only occasionally fatal. Prompt quarantine and general vaccination in the localities where it appeared has always succeeded in extinguishing it. The State Board has again and again informed the people that vaccination is the only safe and practical prophylaxis for smallpox.

The deaths from diphtheria have decreased in the last six years as follows: 1900, deaths 746; 1901, 554; 1902, 424; 1903, 462; 1904, 314; 1905, 366. This decrease we attribute almost entirely to the now general use of diphtheria antitoxin. It took some

time to overcome ignorant opposition and the prejudice against the remedy, but now the people generally understand the situation, and by demanding its use the good results are secured. It is now the widespread opinion in the medical world that antitoxin is a specific against diphtheria if administered before the disease is far advanced, and that the only reason why diphtheria deaths are recorded is because many cases are not treated until the attack has continued for several days. The prophylactic use of antitoxin is not practiced to the degree it should be. If it were used in all outbreaks for immunizing, the number of cases would be greatly diminished.

There were fewer scarlet fever deaths and fewer cases and outbreaks for the year ending November 1, than in the same period for any year since 1900. Typhoid fever also shows a decrease by the same comparison. The statistical report to be made up after December 31, when all data will be at hand, will give full details of diseases, epidemics and deaths.

STATE LABORATORY OF HYGIENE.

Especial attention is invited to the report of work done in the State Laboratory of Hygienc. There are two divisions to the laboratory—the chemical division and the bacteriological and pathological division. The last is devoted entirely to disease prevention work and the first to hygienic water analyses and to food and drug analyses. We feel sure that the work of the laboratory proves fully its usefulness; indeed it is a true economy on account of its disease and adulteration prevention work. The bacteriological and pathological division has been termed "the life-saving station," and the chemical division "the money-saving station."

RECOMMENDATIONS.

In accordance with the law, which makes it the duty of the State Board of Health to make such recommendations as to health statutes as may seem proper, we recommend as follows:

A REGISTRATION LAW.

The registration law passed in 1899, and under which the mortality statistics have been so correctly collected, was declared unconstitutional by the Supreme Court in February, 1904. This

law was an amendment to the health law of 1891, and it was discovered that the title of the amended law was incorrectly quoted in the new act, one line being omitted. This was the sole point upon which the decision was based. As the law of 1891, which now became operative, contained some provisions for registering deaths, births and contagious diseases, the Board decided to continue the system which prevailed under the new law, and to this date mortality statistics have been collected through the momentum acquired from the law of 1899.

The necessity of an efficient registration law plainly exists, and the authority and power conferred upon the State Board of Health for its enforcement should be sufficient in every way.

SANITARY SCHOOLHOUSES AND TEACHING HYGIENE IN THE PUBLIC SCHOOLS.

We suggest a statute requiring that all schoolhouses hereafter built shall conform to natural sanitary laws; also that the act should contain a clause requiring that hygiene be taught in the public schools. Not less than 10 per cent. of school moneys are now wasted on account of unsanitary schoolhouses, in which start most of our epidemics, and in which are laid the foundations in many for consumption and other diseases in after life. Massachusetts, Michigan and other States have statutes of the character we propose, and better health and progress among the school children has thus been secured.

A STATE HOSPITAL FOR INDIGENT CONSUMPTIVES.

Massachusetts, New York, Rhode Island and others have provided State hospitals for consumptives, and Maryland, Pennsylvania, Michigan and other States are considering the matter. Both humanity and economy demand such institutions in every State. At present fully 1,000 poverty-stricken consumptives are being cared for at public expense or by private charity in Indiana, but in such manner as to spread the disease and not restore to health a single patient. The proposition to establish a State Hospital for indigent consumptives is not one to unnecessarily spend money, but is a measure to more wisely expend the money now devoted to caring for these unfortunates.

We believe all of these recommendations are wise, and would, if put in force by the State, save money to the people and materially promote the public happiness.

POLLUTION OF STREAMS, WATER SUPPLIES AND SEWERS.

Indiana is an inland State, and is fortunately supplied with numerous streams and lakes, and except in the central and southern portion there is yet abundance of ground water. It is apparent that our streams and lakes are valuable assets, and should be jealously protected from pollution or other destruction. They are sources of beauty and refreshment to the land, sources of a valuable food supply, and must eventually furnish public water supplies. It is this last fact which makes it urgent that early action be taken for their preservation.

The experience of the Indianapolis and of the Muncie Water companies demonstrates that the ground water is limited, is growing less and less, and is inadequate for the public supply. For a few years both of the cities named had an abundant pure supply, but gradually the quantity diminished and new wells were bored. This did not relieve the situation, for the new wells penetrated the same water bearing stratum as the old ones, and no increase in quantity was secured.

The Muncie Water Company relieved the situation for a time by making up the deficiency with filtered water from White River, but lately the oil wells above Muncie so badly polluted the river with kerosene products that it was impossible to filter the water. This drove the Muncie Company to dam a small creek and establish a water shed. It is certain, however, if stream pollution is permitted to continue, that this supply for Muncie can not be depended upon.

The Indianapolis Water Company has been compelled to put in extensive filter beds, costing five or six hundred thousand dollars, to filter the water from White River. This filtered water is at present mixed with deep well water (the amount of the latter diminishing daily), and this constitutes the Indianapolis supply. The lesson is—Indianapolis must very soon depend entirely upon the river, and if the gross pollution which now exists is permitted to continue, filtration will become more and more difficult and expensive, and Indianapolis, and also other cities on the shores

of White River, will be sorely injured, possibly to a degree to stop their growth. What has occurred along White River will in time occur in all parts of the State, and now seems to be the time to apply the remedy. We propose a law similar to that of Massachusetts, where these same problems arose some years ago, and which the said law has satisfactorily solved. This law should make it unlawful to deposit sewage, factory wastes, or any polluting matter into streams or lakes, and it should provide that within a certain time that all cities and towns shall dispose of their sewage by well proven methods known to sanitary science; and that all factories shall, within twelve months from the going into effect of the law, dispose of their wastes in a sanitary way. All of this has been repeatedly accomplished in other States.

As cities and towns are continually making expensive mistakes in the matter of establishing public water supplies and in building sewers and drains, it seems wise to adopt the successful method pursued in Ohio, Massachusetts, Pennsylvania, and other States, to prevent such mistakes, with their consequent money loss and sanitary failure. This method is to require by statutes that all plans and specifications for public water supplies, and for sewers and drains, shall be submitted for the approval of the State Board of Health before the same may be constructed.

For the State Board of Health to properly execute a law of this kind, controlling stream pollution, the water supplies and sewer construction, a sanitary engineering department would be required, and therefore said law would necessarily create such department. There should be a competent sanitary engineer appointed by the State Board, and a proper appropriation given for the enforcement of the act.

We believe a wise law of this character is absolutely necessary for the promotion of the welfare of the State, and would be an economic measure, and for these reasons we propose the same. We further believe that the protection of the lakes and streams from pollution-destruction, is a subject which will not down, and the question about the matter is, Shall the State attend to it now, or do so after disease, death and pecuniary loss compel action?

THE PURE FOOD AND DRUG LAW.

We call your special attention to the report of the chemical division upon the work done in the enforcement of the pure food and drug law. We think this report will plainly show the value of the department, and it will also show the lameness of the present law as discovered by trials in the courts. Under the present law it must be proven that the vendor of adulterated foods and drugs knowingly sold or had in his possession to sell, and in the case of preservatives, it must every time be proven that the special preservative used is injurious to health. Until these faults are removed, we can not hope to promptly and adequately punish offenders. We therefore recommend the repeal of all laws and parts of laws pertaining to food and drug adulteration, and the enactment of a statute embodying the main principles and features of the national pure food and drug law.

The water work of the chemical laboratory appears to be of special value. One hundred and forty-six public water supplies have been examined, of which 74 were good, 43 bad, and 29 of doubtful character. Five hundred and forty-two private supplies were analyzed, including deep driven and bored wells, and shallow driven and dug wells. Of these, 236 were good, 54 were suspicious, and 202 were bad. These results are indicative of the character of the public and private water supplies of the State, and show the necessity for their careful supervision.

We hope that full consideration of these recommendations will secure your support, and that the same will be recommended in your message to the Legislature.

Approved by the Board, November 16, 1906, and ordered to be submitted to the Governor.

T. HENRY DAVIS, President. GEO. T. McCOY, Vice-President. F. A. TUCKER.

J. N. HURTY, Secretary.

DEPARTMENT OF HEALTH.

FINANCIAL STATEMENT.

RECEIPTS.

		DISBURSEMENTS.		
19	05.			
Nov.	30.	May Stuart, salary	. \$50	00
66	30.	Maude Linn, salary	50	00
4.	30 .	Florence Froschauer, salary	5 0	00
. **	30.	Alice Christian, salary	50	00
••	3 0.	Ethel Hoffman, salary	50	00
44	30.	Dr. Helene Knabe, expense	9	35
Dec.	15.	Dr. T. Henry Davis, Health Officers' conference	26	20
**	15.	Dr. C. M. Eisenbeiss, Health Officers' conference	35	25
**	15.	Dr. F. A. Tucker, Health Officers' conference	25	95
4.6	15.	Dr. W. T. S. Dodds. Health Officers' conference	10	00
44	15.	Prof. Severance Burrage, Health Officers' conference.	10	00
**	15.	Dr. Helene Knabe, sanitary work	4	70
"	31.	May Stuart, salary	50	00
44	31.	Maude Linn, salary	50	00
"	31.	Alice Christian, salary	50	00
**	31.	Florence Froschauer, salary	50	00
44	31.	Ethel Hoffman, salary	50	00
19	06.			
Jan.	4.	Henry W. Bennett, P. M	100	00
46	12.	Indianapolis Telephone Company	27	5 5
44	12.	Wm. B. Burford	97	43
• 6	12.	Dr. J. N. Hurty, expense	114	92
44	12.	Dr. Chas. E. Ferguson, services	27	00
46	12.	Adams Express Co., services	5	95
"	12.	American Express Co., services	7	60
"	12.	U. S. Express Co., services	5	65
44	12.	Western Union Tel. Co., tolls	3	02
"	12.	J. L. Anderson, expense drayage	1	90
"	12.	Crossett & Bates, "Pediatrics"	2	00
**	12.	Leo Lando, merchandise	3	50
"	12.	Geo. J. Mayer, rubber stamp		80
44	12.	American Public Health Association, dues	5	00
"	12.	Parke, Davis & Co., merchandise	5	5 0
46	12.	American Toilet Supply Co	3	75
66	12.	Wm. H. Armstrong & Co., merchandise	9	25
"	12 .	Dr. T. Henry Davis, President	14	05
**	12.	Dr. Wm. N. Wishard	10	00

Jan.	12.	Dr. F. A. Tucker	\$11	45
**	31.	May Stuart, salary	50	00
"	31.	Maude Linn, salary	50	00
44	31.	Alice Christian, salary	50	00
44	31.	Florence Froschauer, salary	50	00
**	31.	Ethel Hoffman, salary	50	00
Feb.	2.	Henry W. Bennett, P. M., stamps	100	00
44	28.	May Stuart, salary	50	00
44	28.	Maude Linn, salary	50	00
**	28.	Alice Christian, salary	50	00
44	28.	Florence Froschauer, salary	50	00
44	28.	Ethel Hoffman, salary	50	00
44	28.	Nellie Prendergast, salary	44	
Mar.	6.	R. E. McCormack, labor	. 9	75
44	6.	F. E. McCarmack, labor		00
4.	6.	J. L. Anderson, expense and drayage		83
44	7.	Dr. T. Henry Davis.		20
**	7.	Dr. Wm. N. Wishard		00
64	7.	Dr. F. A. Tucker	_	70
44	7.	Dr. Geo. T. McCoy		25
44	16.	Henry W. Bennett, P. M., stamps	100	
44	31.	May Stuart, salary	50	
"	31.	Maude Linn, salary		00
44	31.	Alice Christian, salary		00
44	31.	Florence Froschauer, salary		00
46	31.	Ethel Hoffman, salary		00
46	31.	Nellie Prendergast, salary		00
A n=		Wm. B. Burford, printing and stationery	474	
Apr.	13.	Neostyle Co		-
66	13.	Indianapolis Tel. Co., rent and services	20	
•4	13.	J. A. Downey, Postal Guide, 1906	29	
44			Z	50
66	13.	Postal Tel. Cable Co., service		29
44	13.	Western Union Telegraph Co., service		14
44	13.	American Toilet Supply Co., laundry		75
44	13.	American Express Co		50
"	13.	Adams Express Co	_	06
"	13.	U. S. Express Co	_	21
44	13.	Bobb-Merrill, books and merchandise		78
"	13.	British Food Journal, subscriptions, 1906		95
**	13.	W. H. Bass, lantern slides		00
	13.	Pettis Dry Goods Co		88
"	13.	Dr. J. N. Hurty, expense	38	
"	13.	Geo. J. Mayer, letter outfit		00
**	13.	Dr. T. Henry Davis		65
"	18.	Dr. Geo. T. McCoy		00
44	13.	Dr. F. A. Tucker		45
44	13.	Dr. Wm. N. Wishard		00
**	3 0.	Dr. Helene Knabe, expense		34
**	30.	May Stuart, salary		00
44	30.	Mande Linn salary	50	00

	. 30.	Alice Christian, salary	\$50 00
64	30.	Florence Froschauer, salary	50 U
66	30 .	Ethel Hoffman, salary	50 00
4.	3 0.	Nellie Prendergast, salary	40 0 0
May	3.	H. W. Bennett, P. M., stamps	100 00
"	18.	Dr. Wm. N. Wishard	10 00
46	18.	Dr. T. Henry Davis	14 25
44	18.	Dr. F. A. Tucker	10 70
**	31.	May Stuart, salary	50 00
**	31.	Maude Linn, salary	50 00
**	31.	Florence Froschauer, salary	50 0 0
44	31.	Alice Christian, salary	50 00
**	31.	Ethel Hoffman, salary	50 00
44	31.	Nellie Prendergast, salary	40 00
44	31.	Lillian R. Chandlee, salary	31 67
June	22.	H. W. Bennett, P. M., stamps	100 00
66	27.	Dr. A. W. Brayton, services	5 00
**	29.	Dr. A. W. Bitting, services	12 5 0
44	29.	Dr. J. McLean Moulder, services	10 00
"	29.	Dr. J. N. Taylor, services	10 00
44	29.	Dr. F. A. Tucker	20 70
44	29.	Dr. Geo. T. McCoy	66 45
46	2 9.	Dr. T. Henry Davis	23 70
44	30.		50 00
66	30.	May Stuart, salary	50 00
44	30.	· · · · · · · · · · · · · · · · · · ·	50 00
44		Florence Froschauer, salary	
44	30.	Alice Christian, salary	50 00
44	30.	Ethel Hoffman, salary	50 00
	30.	Lillian R. Chandlee, salary	50 00
July		Adams Express Co., services	77
**	13.	American Express Co	4 30
"	18.	U. S. Express Co	3 35
"	13.	American Toilet Supply Co., laundry	3 75
"	13.	American Medical Association, dues, 1906	5 00
	13.	Bobbs-Merrill Co., merchandise	1 86
"	13.	H. M. Brinker, books	3 75
44	13.	Charity Organization, books	4 50
66	13.	Indianapolis Calcium Light Co., lantern exhibit	5 50
"	13.	Dr. J. G. Nehrbas, express	2 89
44	13.	Western Union Tel. Co., messages	3 19
44	13.	Indianapolis Blue Print Co., merchandise	13 15
46	13.	Frances Pharmacy Co., merchandise	4 50
44	13.	The Schofield Pierson Co., book	8 00
44	13.	Chas. Mayer & Co., merchandise	65
46	13.	S. D. Kiger & Co., merchandise	1 00
44	13.	J. L. Anderson, expense	5 72
**	13.	J. N. Hurty, Secretary, expense	49 19
44	13.	Wm. B. Burford, printing, stationery, etc	829 98
44	13.	Dr. T. Henry Davis, Board meeting	14 4 0
64	13.	Dr. Geo. T. McCov. Board meeting	12 25

July	13.	Dr. Wm. N. Wishard, Board meeting	\$20 00
46	13.	Dr. F. A. Tucker, expense	69 15
44	13.	Dr. F. A. Tucker, Board meeting	14 20
44	13.	Indianapolis Telephone Co., rent and tolls	80 70
44	30.	H. M. Bennett, P. M., stamps	100 00
44		, , , , , , , , , , , , , , , , , , ,	
••	81.	May Stuart, salary	50 00
	31.	Maude Linn, salary	50 00
••	31.	Alice Christian, salary	50 00
**	31.	Florence Froschauer, salary	50 00
44	31.	Ethel Hoffman, salary	50 00
**	31.	Lillian R. Chandlee, salary	50 00
Aug.	23.	H. W. Bennett, P. M., stamps	150 00
**	31.	May Stuart, salary	50 00
**	31.	Maude Linn, salary	5 0 00
16	31.	Alice Christian, salary	50 00
44	30.	Florence Froschauer, salary	50 00
4.	31.	Florence Froschauer, salary	50 00
"	31.	Ethel Hoffman, salary	50 00
44	31.	Lillian R. Chandlee, salary	50 00
Sept		H. W. Bennett, P. M., stamps	200 00
sept "	30.		
**		May Stuart, salary	50 00
44	30.	Maude Linn. salary	50 00
	31.	Alice Christian, salary	50 00
**	30.	Florence Froschauer, salary	50 00
44	30.	Ethel Hoffman, salary	50 00
**	3 0.	Lillian R. Chandlee, salary	50 00
Oct.	12.	Dr. T. Henry Davis	14 40
44	12 .	Dr. Geo. T. McCoy	12 25
44	12.	Dr. Wm. N. Wishard	10 00
**	12.	Dr. F. A. Tucker	10 80
46	12.	Merrick Fox Typewriter Co	125 00
46	12.	Indianapolis Telephone Co	29 55
46	12.	Wm. B. Burford	594 27
46	12.	Pettis Dry Goods Co	72 86
44	12.	Addressograph Co	139 13
66	12.	Prof. R. L. Sackett	800 00
44	12,	W. H. Bass Photo Co.	16 20
44	12.	G. E. Steckert & Co.	48 90
44	12.	Dr. J. N. Hurty.	219 88
46	12.	Schofield Pierson Co	
44	12.	Smith Duomian Transventon Co.	6 25
44		Smith-Premier Typewriter Co	8 50
64	12.	Western Union Telegraph Co	6 50
"	12.	J. L. Anderson	4 55
	12.	American Express Co	9 70
44	12.	Adams Express Co	1 25
44	12.	U. S. Express Co	2 52
**	12.	American Toilet Supply Co	5 00
44	12.	Parke, Davis & Co	1 15
46	12.	F. A. Hardy & Co	5 75
66	12.	Open Air Quarterly	8.00

Oct.	12.	Dues National Tuberculosis Association	\$5	00
"	12.	Indianapolis Calcium Light Co	10	00
44	12.	Lederle Antitoxin Laboratories	41	25
44	27.	Dr. A. W. Brayton	25	00
**	27.	Parke, Davis & Co., merchandise	26	25
44	27.	J. L. Anderson, postage stamps	200	00
44	29.	Dr. J. N. Hurty, expense	22	97
• •	29.	Dr. Geo. T. McCoy, expense	24	08
. • •	29.	Dr. Wm. N. Wishard, expense	18	10
"	29.	Dr. F. A. Tucker, expense	26	65
44	29.	Bobbs-Merrill Co., directory	. 2	10
46	29 .	Leo Lando, hygrometer	3	00
44	29.	United Press News Association, clippings	12	50
44	29.	G. E. Stechert & Co., text books	11	82
• •	29.	J. L. Anderson, expense	2	04
"	29.	American Express Co	4	88
"	29.	Smith-Premier Typewriter Co., repairs	.7	00
14	29.	Dr. J. W. Strange, express		80
"	29.	Addressograph Co., addresses		33
44	29.	New Telephone Co., tolls		20
44	29.	Wm. B. Burford, printing, stationery, etc	716	82
"	29.	Western Union Telegraph Co., services	1	49
"	31.	I. L. Miller, services	67	50
	31.	May Stuart, salary	50	00
46	31.	Maude Linn, salary	50	00
44	31.	Alice Christian, salary	50	
66	31.	Florence Froschauer, salary	50	00
.44	31.	Ethel Hoffman, salary	50	00
44	31.	Lillian R. Chandlee, salary		00
"	31.	Balance reverted to General Fund	187	21
			0,000	00

STATE LABORATORY OF HYGIENE.

LABORATORIES.

EQUIPMENT FUND.

Balance from 1905	\$619	70
DISBURSEMENT.		
Capitol Furniture & Cabinet Co., furniture	\$600	00
Central Supply Co., merchandise	10	00
	\$610	00
Balance	9	70
Total	\$619	70

MAINTENANCE FUND.

1905.			
Nov. 30.	Prof. H. E. Barnard, salary and expense	\$188	7 9
" 30.	H. E. Bishop, salary	60	00
" 3 0.	L. W. Bristol, salary	60	00
" 30.	Nellie M. Coney, salary	50	00
" 30.	Dr. Helene Knabe, salary	60	00
" 30.	Philip Brodus, salary	40	00
Dec. 19.	Aquos Distilled Water Co., water	3	60
" 19.	Hogan Transfer Co	8	01
" 19.	E. J. Rust, electric wiring	15	00
" 31.	Prof. H. E. Barnard, salary	125	00
" 31.	Prof. H. E. Barnard, expense	13	60
" 31,	H. E. Bishop, salary	60	00
" 31.	Mrs. Nellie M. Coney, salary	50	00
" 3 1.	Dr. Helene Knabe, salary	60	00
" 31 .	Louis W. Bristol, salary	60	00
" 31 .	Philip Brodus, salary	40	00
1906.	· .		
Jan. 12.	Oliver Typewriter Agency	125	00
" 12.	E. H. Sargent & Co., haemometer	35	00
" 12.	Sanborn-Marsh Electric Co., merchandise	7	44
" 12.	Vonnegut Hardware Co., merchandise	7	64
Dec. 12.	H. E. Zimmer, rubber tubing	3	72
" 12.	Joseph Gardner, copper ovens	6	56
" 12.	American Toilet Supply Co		65
" 12.	Daniel Stewart Co., drugs		40
" 12 .	Aquos Distilled Water Co., water	1	2 0
" 12.	L. S. Ayres & Co., cloth	2	00
" 12.	Hogan Transfer Co., freight and drayage	2	4 3
Jan. 12.	Central Union Tel. Co		35
" 12 .	Wm. Langsenkamp, merchandise	20	75
" 12.	Lilly & Stainaker, merchandise		15
" 12 .	Schrader China Co., jars	2	20
" 12.	L. E. Morrison & Co., rubber apron		75
" 12.	Bausch & Lomb Optical Co., merchandise	265	
" 11.	Eimer & Amend, chemicals and apparatus	128	
" 31.	Dr. T. V. Keene, salary	150	
" 31.	Dr. Helene Knake, salary		00
" 31.	Effle Stephens, salary		00
" 31.	Prof. H. E. Barnard, salary	125	
" 31.	Prof. H. E. Barnard, expense	_	75
" 31 .	H. E. Bishop, salary		00
" 31 .	Nellie M. Coney, salary		00
" 31.	Norris Thompson, salary	15	00
" 31.	Philip Brodus, salary and balance due for November		•-
	and December		39
Feb. 17.	Sandborn-Marsh Electric Co		00
" 17. " 20	Capital Furniture & Cabinet Co		90
20.	Freaney Bros., plumbing	209	
Jan. 1.	Balke & Krause Co., lumber	5	76
2-Bb.	of Health.		_

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Jan.		Oliver Typewriter Agency, ribbon		75
**	15 .	Indianapolis Blue Print Co	1	95
• •	17.	Geo. J. Mayer, rubber stamps	1	05
"	17.	Wm. Langsenkamp, repairs	1	00
**	17.	Daniel Stewart Co., drugs	8	87
••	20.	The H. Lieber Co., frames	2	00
• •	22.	Vonnegut Hardware Co., merchandise	6	10
**	23.	E. H. Eldridge Lumber Co	3	5 0
• •	23.	Schrader China Co., jars		90
••	29.	Hogan Transfer Co	2	00
**	3 0.	Pettis Dry Goods Co., cotton	1	10
Feb.	1.	Royse Electric Co., merchandise		88
46	1.	Shortridge High School, gas hood	5	00
"	14.	Torsion Balance Co., merchandise	1	25
".	17.	Dr. T. Victor Keene, express		95
44	18.	Dr. T. Victor Keene, expense	3	88
"	21.	Columbia School Supply Co., weights	3	25
44	22.	Bliss-Swain Co., two coats	3	00
"	23.	H. E. Barnard, expense	23	04
44	23.	R. W. G. Owen, widal test	1	00
**	28.	Dr. T. V. Keene, salary	150	00
44	28.	Dr. Helene Knabe, salary	60	00
**	28.	Effle Stephens, salary	50	00
**	28.	Prof. H. E. Barnard, salary	125	00
46	28.	H. E. Bishop, salary	60	00
44	28.	Nellie M. Coney, salary	50	00
•	28.	Norris Thompson, salary	35	00
44	28.	Philip Brodus, salary	40	00
Mar.	. 13.	Bausch & Lomb Optical Co., merchandise	2	95
44	13.	Bausch & Lomb Optical Co., merchandise	252	40
46	31.	Dr. T. V. Keene, salary	150	00
46	31.	Dr. H. Knabe, salary	60	00
44	31.	Effle Stephens, salary	50	00
"	31.	Prof. H. E. Barnard, salary	125	00
44	31.	H. E. Bishop, salary	60	00
46	31.	Nellie M. Coney, salary	50	00
64	31.	N. Thompson, salary	35	00
44	31.	Philip Brodus, salary	44	28
Apr.	5.	American Can Co., merchandise and freight	52	47
44	5.	Eberhard Faber, merchandise	15	55
46	7.	E. H. Sargent & Co., merchandise	53	48
44	7.	E. H. Sargent & Co., merchandise	63	20
44	10.	Arthur H. Thomas Co., merchandise	174	71
44	16.	Frank Bird Transfer Co., drayage	1	00
44	16.	American Toilet Supply Co., laundry	18	55
**	16.	Aquos Distilled Water Co., water	7	40
44	16.	Badger Furniture Co., desk stools	6	00
**	16.	Lilly & Stalnaker, merchandise	5	65
44	16.	Joseph Gardner, test tube racks	2	00
**	16.	H. E. Zimmer, soap		44
44	16	Daniel Stewart Co. drugs and merchandise	7	07

Apr.	16.	Hogan Transfer Co	\$ 2	00
44	16.	Wm. B. Burford, printing and stationery	16	65
46	16.	The H. Lieber Co., framing	8	05
14	16.	Vonnegut Hardware Co., merchandise	2	58
"	16.	Ed. Z. Franks, automatic water still	14	00
"	16.	A. Daigger, laboratory supplies	142	13
44	16.	Prof. H. E. Barnard, traveling expense and merchan-		
		dise	18	64
**	30.	Prof. H. E. Barnard, salary	125	00
44	30.	H. E. Bishop, salary	60	00
"	30.	Nellie M. Coney, salary	50	00
46	30.	N. Thompson, salary	35	00
44	3 0.	Philip Brodus, salary	42	80
44	30.	Dr. T. V. Keene, salary	150	00
46	30.	Helene Knabe, M. D., salary	60	00
"	30.	Effle Stephens, salary	50	00
May	29.	Postage stamps	50	00
"	31.	Dr. T. V. Keene, salary	150	00
44	31.	Dr. H. Knabe, salary	60	00
**	31.	Effle Stephens, salary	50	00
44	31.	Prof. H. E. Barnard, salary	125	00
**	31.	H. E. Bishop, salary	60	00
46	31.	Nellie M. Coney, salary	20	00
44	31.	N. Thompson, salary	35	00
66	31.	Philip Brodus, salary	44	29
June		Prof. H. E. Barnard, expense	24	18
44	29.	Dr. T. V. Keene, expense	17	70
44	30.	Dr. T. V. Keene, salary	150	
44	30.	Dr. Helene Knabe, salary	60	00
44	30.	Effic Stephens, salary	50	
46	30.	Prof. H. E. Barnard, salary	125	
44	30.	H. E. Bishop, salary	60	
6.	30.	Nellie Prendergast, salary	40	
44	30.	N. Thompson, salary	35	
46	30.	Philip Brodus, salary	42	-
July	20.	Eimer & Amend, merchandise		00
"	20.	G. E. Stechert & Co., text books	23	
**	13.	Hogan Transfer Co		38
64	13.	American Toilet Supply Co., laundry	16	
44	13.	Parke, Davis & Co., tubes		00
44	13.	Joseph Gardner, merchandise and labor	56	
**	13.	Central Supply Co., merchandise		48
44	13.	Daniel Stewart Drug Co., merchandise		77
44	13.	H. E. Zimmer, merchandise	,	75
46	13.	Leo Lando, magnifiers	4	50
44	13.	Wm. Langsenkamp, repairs		00
**	13.	Pettis Dry Goods Co., merchandise		80
**	20.	E. H. Sargent & Co., merchandise	24	
**	13.	The H. Lieber Co., merchandise		30
44	13.	W. B. Burford, printing, stationery and supplies	48	
66	13.	Vonnegut Hardware Co., merchandise		45
	40.	TVMMENUE ALGIUNGIE VVII MELCHGHUNDE	·	- 3

July 13.	Columbia School Supply Co., hydrometer jars	\$ 5 33
" 2 3.	Arthur H. Thomas Co., merchandise	86 40
" 18.	Ballweg & Co., boxes	22 50
Aug. 9.	Prof. H. E. Barnard, expense attending National and	
	State Dairy and Food Association meeting, July	
	16 to 24, 1906	74 10
July 31.	Dr. T. V. Keene, salary	150 00
" 31 .	Dr. Helene Knabe, salary	60 00
" 31.	Dr. Ada Sweitzer, salary	16 0 0
" 31 .	Effie Stephens, salary	50 0 0
" 31.	Prof. H. E. Barnard, salary	125 00
" 31.	H. E. Bishop, salary	60 00
" 31. " 31	Mrs. Nellie M. Coney, salary	37 50
01.	Norris Thompson, salary	35 00
01.	Philip Brodus, salary	44 29
Aug. 23.	Dr. D. W. McNamara, samples and services	11 83
20.	Henry W. Bennett, P. M., postage stamps	100 00
٠U,	Chas. L. Bragg, samples, traveling expense, wages	24 88
20.	H. E. Barnard, samples for analysis	2 87
40.,	Norris Thompson, samples for analysis	2 40
20.	Will D. McAbee, samples and expense	18 37
20.	Will D. McAbee, wages one week	10 00
01.	Dr. T. V. Keene, salary	150 00
01.	Dr. Helene Knabe, salary	60 00
01.	Dr. Ada Sweitzer, salary	30 00
01.	Katherine Loechle, salary	40 00
01.	Prof. H. E. Barnard, salary	125 00
" 31. " 31.	H. E. Bishop, salary	60 00
" 31.	Nellie M. Coney, salary Norris Thompson, salary	50 00 35 00
" 31.	Philip Brodus, salary	
Sept. 1.	Chas. T. Bragg, expense samples, traveling	18 65
" 1.	Chas. T. Bragg, salary one week	10 00
" 4 .	J. J. Hinman, services in laboratory	25 00
4 G.	Chas. T. Bragg, expense samples and traveling	6 10
" 6.	Chas. T. Bragg, salary	5 00
" 8 .	C. E. Canaday, expense samples and services	4 20
" 10.	Will D. McAbee, expense samples and traveling	32 75
" 10.	Will D. McAbee, salary two weeks	20 00
" 11.	Lea Bros. & Co., National Standard dispensatory	8 00
" 11.	Lea Bros. & Co., National formulary	65
" 14.	J. J. Hinman, expense samples and traveling	10 54
" 14.	J. J. Hinman, salary	5 00
" 18.	Will D. McAbee, expense samples and traveling	23 80
" 18.	Will D. McAbee, salary one week	10 00
" 29 .	R. E. Bishop, expense samples for laboratory	23 53
" 30.	Dr. T. V. Keene, salary	150 00
" 30 .	Dr. Helene Knabe, salary	75 00
" 3 0.	Dr. Ada Sweitzer, salary	30 00
" 30 .	Katherine Loechle, salary four days	5 00
" 30.	Prof. H. E. Barnard, salary	125 00

Sept.	30.	H. E. Bishop, salary	\$7 5	00
**	30 .	Nellie M. Coney, salary	5 0	00
46	30.	N. Thompson, salary	35	00
**	30.	I. L. Miller, salary	15	00
44	3 0.	Philip Brodus, salary	42	90
Oct.	1.	Norris Thompson. expense samples, drugs, etc	17	74
44	8.	R. E. Bishop, expense samples for laboratory	32	41
44	8.	R. E. Bishop, salary two weeks	20	00
44	9.	Norris Thompson, samples for laboratory	24	16
44	16.	Bausch & Lomb Optical Co., merchandise	132	02
46	12.	American Toilet Supply Co., laundry	13	70
-4	12.	E. H. Eldridge Lumber Co., lumber and supplies	15	00
46	12.	Pitman-Myers Co., chemicals and supplies	69	62
4.	12.	Wm. B. Burford, printing, stationery and supplies	78	84
**	12.	J. A. Diggle, gas heater connections, etc	27	71
**	12.	H. E. Barnard, expenses Aug. 30 to Oct. 10	35	79
Sept.	15.	Vonnegut Hardware Co	3	70
	15.	W. F. Williams Mfg. Co		75
**	15.	Stephens Photo Supply Co	2	25
••	15.	Daniel Stewart Co		50
.4	15.	Public Drug Co	_	70
**	15.	Chas. Coonly & Co		60
•4	15.	G. A. Senrick & Co.		75
44	15.	Robert P. Milton		80
**	15.	Leo Eliel		60
44	15.	Otto C. Bastlan		80
**	15.	G. E. Cimmerman		65
Oct.	1.	Columbia School Supply Co	2	60
"	1.	Central Supply Co	_	53
Sept.		Indianapolis Gas Co	. 3	75
i.	15.	Berterman Bros.		00
**	15.	H. E. Zimmer		80
Oct.	1.	Hogan Transfer Co.	·	75
"	1.	American Express Co		55
44	1.	The H. Lieber Co	3	80
**	1.	Robert Worthington, jabor	_	00
44	12.	R. E. Bishop, expense samples and salary	50	
46	31.	Bausch & Lomb Optical Co., merchandise	23	
44	31.	H. D. Barnard, expense	11	
44	31.	Dr. T. V. Keene, salary	150	
• •	31.	Dr. Helene Knabe, salary	75	
**	31.	Dr. Ada Sweitzer, salary	30	
44	31.	Mrs. Florence M. Carper, salary	38	
44	31.	Katherine Loechle, salary		70
44	31.	Prof. H. E. Barnard, salary	125	
44	31.	H. E. Bishop, assistant, salary	120 75	
44	31.		50	
66	31. 31.	Mrs. Nellie M. Coney, salary	35	
44	31.	Norris Thompson, salary	35 44	
	OI.	Philip Brodus, salary	44	4 0

Appropriation		
Disbursement	9,994	61
Balance reverting to General Fund	\$ 5	39
RECAPITULATION.		
Balance from Equipment Fund, 1905	\$619	70
Appropriation General Fund	10,000	00
Appropriation Laboratory Maintenance Fund		
Total	20,619	70
EXPENDITURES.		
Equipment Fund	\$610	00
Expense Fund	9,812	79
Laboratory Maintenance Fund	9,994	61
Total	\$20,417	40
Balance	\$202	30
Reverting to General Fund	192	
Balance Equipment Fund	\$ 9	70
Secretary's salary\$2,400 00	•	
Chief Clerk's salary		
Total\$3.400 00		

Minutes of Transactions

BY

Quarters.

FIRST QUARTER.

SPECIAL MEETING.

December 14, 1905.

Present: Drs. Davis, Eisenbeiss, Tucker and Hurty.

Meeting called to order by the President at 12 m. The work of the Health Officers' School for Town Officers was reviewed and approved.

Adjourned to meet at 2 p. m., Friday, December 15.

ADJOURNED MEETING.

December 15, 1905.

Called to order by President Davis.

Present: Drs. Davis, Eisenbeiss, Tucker and Hurty.

The two days' meeting of the Health Officers' School were reviewed, and the proceedings ordered written out.

The following resolution after the discussion was adopted:

RESOLUTION CONCERNING THE NATIONAL PURE FOOD LAW.

Whereas, Food and drug adulteration has become a very great evil, causing enormous injury to the health and life of the people, and also causing them great monetary loss; and

Whereas, It is certainly true that the State food and drug laws do not furnish practical protection on account of their varying standards and requirements; therefore it is

Resolved, That the Indiana State Board of Health, which is charged with the enforcement of the Indiana pure food and drug law, most respectfully requests the Senators and Congressmen from Indiana to give their support to the Heyburn Bill, now before the Congress of the United States.

Passed unanimously.

Ordered, That no more equipment or apparatus or large orders for supplies shall be purchased, except by order of the Board; but the Secretary may purchase such minor supplies as are necessary for the proper conduct of the laboratory.

REGULAR MEETING OF THE STATE BOARD OF HEALTH.

January 12, 1906.

AFFAIRS CONSIDERED OF THE FOURTH CALENDAR QUARTER OF 1905 AND THE FIRST FISCAL QUARTER OF 1906.

Present: Drs. Davis, Wishard, Tucker and Hurty. Called to order by President Davis at 2:20 p. m.

Minutes of the last regular, and special meeting of December 14, read and approved.

Report of Secretary for the last calendar quarter called for and read as follows:

QUARTERLY REPORT OF SECRETARY.

Comparatively speaking, smallpox has almost disappeared from the State. No deaths from the disease occurred for the last three months, and only straggling mild cases over the State have been reported. In December small epidemics (less than ten cases) of very mild form occurred in Allen County, in Fort Wayne, also in a railroad camp in Johnson County. Only two of the nine cases in the camp ceased working during the attack. The cases were not reported for some time, as they were not suspected of being smallpox. Less typhoid occurred in the last calendar quarter of 1905 than in the same period of 1904. An epidemic was investigated by Dr. Knabe at Cambridge City, and full report by her is added hereto. Typhoid, as usual, was first in order of area of prevalence in October and November. Bronchitis was first in December. An unusual amount of tonsilitis was reported in November.

VISITS AND INSPECTIONS.

November 1, Vincennes.—Account of meeting of the State Charities Association, to deliver an address upon tuberculosis.

November 12, Cambridge City.—By Dr. Knabe, account typhoid.

November 14, Columbus.—Account of conference with local authorities, and to deliver an address on public health before the local sanitary association.

November 17, Kokomo.—On account of smallpox.

November 23, Mooresville.—On account of smallpox.

November 26, New York.—Account of National Tuberculosis Exhibit.

December 8, Cambridge City.—On account of typhoid fever, and to deliver an address upon public health before the local teachers' association and citizens.

December 5, Lafayette.—On account of smallpox in Tippecanoe County north of the city.

December 12, Delphi.—On account of conference with local authorities, and to deliver an address upon public health before the Oracle Club.

December 12, Middletown.—Dr. Knabe, to investigate an instance of wholesale poisoning, supposed to be by ptomains.

Complete reports of these visits are given herewith.

Vincennes, November 1.—The State Charities Association hold annual meetings in various parts of the State. This year the five days' meeting was held in Vincennes. Addresses were made on the different days by the Governor, the Lieutenant-Governor, and many eminent men from other States. The evening of November 1 was given up to a consideration of tuberculosis. The principal speaker of the evening was Dr. Frank Billings, of Chicago. In his address he made an argument for the creation of a State hospital for consumptives, which was based principally upon the experiences of physicians. He told in detail of the distressing and heart-rending incidents met with in general practice, and how it is possible for the State to save hundreds of lives annually; . also prevent the breaking up of homes and the making of widows and orphans. "The first step," said Dr. Billings, "in the fight against tuberculosis by the State, is the establishing of a State hospital where poor and deserving people smitten with the disease may be taken and cured. If the State is not interested in saving helpless women and children, who shall be interested? State is not interested in protecting and preserving the homes, who shall be? If the State is not interested in preventing the creation of widowhood and orphanage, who shall be interested?" Your secretary was the second speaker, and was assigned the duty of presenting the consumption statistics of the State.

was done by charts and tables drawn from the statistics of the State Board of Health.

Columbus, November 14.—The Board of Health of the city of Columbus invited me to meet with them on November 14 to consider the water supply of the city and needed sanitary reforms. At the same time I was invited to deliver an address in the evening before the Women's Sanitary Association. matter of the public water supply, the board was advised to adopt filtration works and not deep wells. Columbus has an unfailing soft water supply in the east fork of White River. needs filtration. Some members of the council and many citizens advocate deep wells; the objections to which are that they always furnish hard water and invariably in time give out, as has been the case at Indianapolis, Muncie, and Fort Wayne. This is also true of numerous cities throughout the United States. Columbus has only a partial sewage system. It is very small indeed for the size and wealth of the community. The board was advised to advocate the building of a sanitary system of sewers. The proper procedure would be to employ an expert sewer engineer to visit the sewer system leading to every lot. It would, of course, be impossible to build this system all at once, but it would be possible to gradually construct it.

In the evening at the First Christian Church I addressed the Women's Sanitary Association, making suggestions how the said association might proceed to better affairs and conditions in Columbus, and also presenting in a general way the tuberculosis conditions in the State.

Kokomo, November 17.—Two mild cases of smallpox were discovered at the borders of the city, and there was a dispute among the physicians as to the nature of the disease. For this reason the State Board of Health was called upon for a visit. Upon arrival I was taken to see the cases. They proved to be unquestionably smallpox, and all precautions were taken accordingly.

Mooresville, November 23.—In answer to an urgent telephone message from Dr. Brackney, Health Officer, I went to Mooresville to see a case of supposed smallpox. The patient was 32 years old, and he proved to have a plain attack of severe chickenpox. He had an excellent vaccination mark, and all of the symptoms pointed to chickenpox rather than to smallpox. No quarantine

was held, and there was no increase of cases. The children in the house had all recently had chickenpox a few weeks before, and this man, a boarder in the house and a traveler, had very likely contracted it from the children. He had never had the disease before.

New York, November 26.—Permission granted, I visited New York, November 26, and remained there four days, attending the American Tuberculosis Exhibition.

AMERICAN TUBERCULOSIS EXHIBITION.

The American Tuberculosis Exhibition, which opened November 27 and closed December 9, was under the auspices of the National Association for the Study and Prevention of Tuberculosis and the Committee on the Prevention of Tuberculosis of the Charity Organization Society. The exhibition was in the west wing of the American Museum of Natural History on Seventy-seventh Street, near Central Park. The object of the exhibition was to show the methods that are being adopted throughout this country and in Europe to prevent and cure consumption. On the night of November 27, before an audience of at least 1,500, in the lecture amphitheater of the Museum building, addresses were made by Dr. Thomas Darlington, Health Commissioner of New York; Mr. Morris K. Jessup, philanthropist; the President of the Museum, and Mr. Talcott Williams, editor of the Philadelphia Press. On Wednesday evening, November 29, another large audience assembled in the Auditorium, and the subject of the evening was "Tuberculosis and the Labor Unions." This meeting was addressed by several labor leaders, among them J. W. Sullivan and Prof. Graham Taylor. Samuel Gompers was sick and could not attend. This meeting was also addressed by the well-known leader in philanthropy, Mr. Edward T. Divine. The speakers traced out clearly the relationship which the laboring classes have with tuberculosis. Mr. Sullivan in his speech made plain how the rich people are directly and immediately interested in the suppression of the disease. It was Mr. Sullivan who told the story, which I found was well known in New York, about Mrs. McKinley's fine dress being made in a sweatshop by consumptive women. supposed all the time that this dress was constructed in the

magnificent Fifth Avenue establishment from which it was purchased. The address of Prof. Taylor was exactly to the point, was eloquent, and his plea for the life and health of the laboring classes aroused much enthusiasm. Dr. Divine, scholar and philanthropist, who gives his whole life to charity work, delivered an address which was not second in effectiveness to that of Prof. Taylor. On the evening of December 1 another public meeting was held in the Museum auditorium. A crowd assembled, and not less than 2,000 were present. Dr. Herman Biggs presided. The speakers were Dr. Flick, superintendent of the Henry Phipps' Institute; Dr. Trudeau, of the Saranac Sanatorium; Dr. Bowditch, of the Sharon, Mass., Sanatorium, and Drs. Evans and Jacobi, of Chicago. There were present Dr. Jacobs, of Baltimore, and several of the faculty of Johns Hopkins University; also Drs. Pruden, Northrup, Knopf, and others representative of the New York City medical profession. Philadelphia was also fully represented, and prominent among the gentlemen from that city was Dr. Ravenel, who has made the brilliant experiments upon tuberculosis infection, through the intestinal tract. On the stage sat the millionaire philanthropist, Henry Phipps, who will give \$5,000,000 for the institution which bears his name. Mr. J. Pierpont Morgan, who is the treasurer of the Exhibition Committee, was present in the audience. This meeting on Friday evening, December 1, was of such moment as to warrant the term "epoch making."

THE EXHIBITION.

Upon entering the exhibition room, the first exhibit to attract attention was a section, full size, of a cell in the Clinton Prison. This cell illustrated ventilation and all sanitary features. Dr. Ransom, physician of the Clinton Prison, was present, and in another part of the room exhibited statistical charts, photographs, and drawings illustrating how tuberculosis had been expelled from the prison and was no longer produced by living in that institution. The New York City Board of Health exhibit was very extensive and complete, and illustrated the work it is doing with ninety-eight large frames showing charts, pictures, diagrams, blanks, and the like. Dr. Biggs estimates that 85 per cent. of all tuberculosis cases are reported. Of the remaining 15 per cent. ten

never call a physician, and the other five is the result of neglect on the part of practitioners. We might ask: When will it be possible to make such a report as this in Indianapolis? Further illustrations of the work of the New York Board of Health were shown in two large books two feet square and six inches thick. books showed by pictures, charts, statistics and running account, the work of the City Board in its fight against tuberculosis since the same was begun. The New York Bellevue and Allied Hospitals had striking exhibits. One of these was "a typical dark interior bedroom, one of 360,000 in New York city, as the visiting nurses see them." The above was the sign over this repro-The bedstead, bed clothing, and indeed everything in the room, were transferred from a real case. Of course, the articles had been disinfected, but the room was exactly like those found in the tenements, minus the dirt. By the side of this exhibit was another of the same room after it had been remodeled and alterations effected by the visiting nurses of the tuberculosis clinic of Bellevue and Allied Hospitals and by the Tenement House Department. In the remodeled room a window had been cut through, the room itself made clean, papered with light colored paper, and made at least 50 per cent. more habitable. The New York City Tenement Department represented its work by two large cabinets of 41 leaves each, showing photographs, four on each leaf, on both sides. This made eight to a leaf, 204 photographs in all. These represented tenement house conditions. This association also showed 24 frames 2 by 3 feet, which made plain how difficult it was for the poor to live in New York, and how productive of disease such methods of living must be. Other exhibits illustrative of the above conditions of tuberculosis were made by the Presbyterian Hospital Dispensary and the Gouverneur Hospital, the St. Joseph Hospital for Consumptives, the Bellevue Hospital, the New York State Hospital for Incipient Consumptives, the Stony Wold Sanatorium, the Loomis Sanatorium, Sanatorium Gabriels, Saranac Lake Hospital, Toronto Free Hospital, Moskoka Sanatorium, Colorado Association Health Farm, Agnes' Memorial Sanatorium, White Haven Sanatorium, Pennsylvania; Johns Hopkins Hospital, Tuberculosis Department, showing the Phipps Dispensary; Visiting Nurses' Association of Baltimore, the Hampton Negro Conference, the Massachusetts State Board of Health Hospital, the Boston Anti-Tuberculosis Association, Sharon Sanatorium of Massachusetts, the Pottenger Sanatorium of California, Craigmore Sanatorium, Colorado National Jewish Hospital, Maine State Sanatorium, Dr. Brooks Sanatorium at New Canaan, Conn., the Gaylor Farm Sanatorium, Sea Breeze Hospital, United States General Hospital, Ft. Bayard; the Newport Anti-Tuberculosis Association, the South Mountain Camp Sanatorium, California Mountain Side Sanatorium, Cal.; Maryland State Board of Health, Massachusetts State Board of Health, and the Indiana State Board of Health.

To detail all of these exhibits would, of course, be exceedingly tiresome, but to see them would be interesting and instructive, as I found it to be. Dr. Biggs remarked that the growth of the work of preventing tuberculosis astonished him. "What we see before us," said he, "has all developed within the last twelve years, and it represents a work of humanity and for medicine which is inestimable." There were exhibited models of sleeping shacks, at least a score of different methods of disposing of sputum in a sanitary way, and there were also large models in plaster of tenement blocks in New York, as they appeared before they were torn down, and again as they appear after being built in accordance with the new tenement law of the city. ment Commission of New York has the power to condemn buildings and to force their demolition. They can not, however, compel rebuilding, but if the owner does rebuild, then the tenement must be constructed according to certain principles laid down in the law, and which are specifically prescribed by the Commission. The immense factor of unsanitary tenements in the production of disease has only to be mentioned to be admitted and understood. The plaster models of the old tenement building occupied a table 4 by 2 feet, and were in exact proportion. The rentals from this one block, as represented in the model, amounted to \$115,000 per year. This was called the "Lung Block," and belonged principally to the Trinity Church Corporation. It is this corporation which put up the strongest opposition to the passage of the law creating the Tenement House Commission. in plaster showing the new buildings was on a table 5 by 7 feet, and by looking in at the windows it was plain how every room was provided with light and air. It is the belief of the tenement workers that the providing of pens and awful quarters increases pauperism and miserable living and does not, as is contended by the owners of these awful tenement blocks, provide shelter for those who would otherwise be shelterless.

The pathological exhibit was not so extensive as that shown at the Baltimore meeting in January, 1904. It was, however, as much to the point. The Phipps Institute exhibited 45 specimens, showing as many tissues infected with tuberculosis. Larkin, Wilson, Delafield and Wood made an interesting exhibit of acid-fast bacteria, to which class tubercle organisms belong, and all had many pathological specimens. Dr. Pruden exhibited seven specimens of lungs which were labeled "Carbon Lungs." placard announced that most of the specimens were taken from persons who had died from other diseases than tuberculosis, but whose lungs were found to be filled with soot, making them black. With these lungs were exhibited those of an Eskimo and of a young child. showing how the lungs of a human being look when normal. The Eskimo was accidentally killed, and never lived in a region where soot is known. Dr. Pruden also exhibited a gelatin plate with the following notice: "The scattering of bacteria in the air when sneezing." In this notice was printed the following: "In sneezing, a fine spray or fluid from the nose or throat is driven into the air. In this way the air for two or three feet in front of the person who sneezes or coughs without covering mouth and nose, may be contaminated. If he be a consumptive, these secretions may contain tubercle bacilli. specimen shows what was coughed four feet away when a student coughed and sneezed after rinsing mouth and nose with a culture of prodigiosus. The red spots growing luxuriantly upon the plate make plain the contamination of the atmosphere by coughing and sneezing." Other plates exhibited by Dr. Pruden show how flies carry tubercle bacilli on their feet. Flies were permitted to feed upon sputum, and then were placed in a glass box, the air of which was sterile, and allowed to walk over the gelatin plates. On some plates tubercle bacilli were growing, and on others bacillus prodigiosus, which, as we know, makes a more striking illustration.

The Saranac Laboratory showed cultures in tubes and bottles

of tubercle bacilli, also illustrating the chemical composition of this organism by showing in proportion amounts of wax, acids, fat, tissue, etc., which constitute the bacillus. To illustrate the cnormous scale upon which these experiments were conducted, where a pound of tubercular bacilli must be grown, two ounces of powdered bacilli were shown. Dr. Trudeau also showed tuberculin, and bacilli emulsions. Conspicuously posted in large letters on a banner was the following resolution passed in regular meeting by the New York Medical Association:

"Whereas, There is no specific medicine for tuberculosis known. and the so-called cures and specifics and special methods of treatment widely advertised in the daily papers are, in the opinion of this Society, without special value and do not at all justify the extravagant claims made for them, and serve chiefly to enrich their promoters at the expense of poor, and frequently ignorant or credulous consumptives; therefore

"Resolved, That a public announcement be made that it is the unanimous opinion of this Society that there exists no specific medicine for the treatment of pulmonary tuberculosis; that no cure can be expected from any kind of medicine or method except the regular accepted treatment which relies mainly upon pure air and nourishing food."

Cambridge City, December 8.—Upon invitation from the town authorities I visited Cambridge City to confer with them upon various public health affairs and especially in regard to typhoid fever, an epidemic of this disease having prevailed very lately. It was also arranged that at the time of my visit I should address the Township Teachers' Association and citizens. With Dr. J. B. Allen, Health Officer, I visited twelve premises where typhoid fever existed or had existed. All but two of these were found to be exceedingly unsanitary; just the kind of places where typhoid should prevail. The disposal of sewage is exclusively by the pit method, there being no sewers in the town. The evils of this method were gone into extensively, and the town council was urged to at least begin the building of a proper sanitary sewer As is always the case in such instances, I suggested that a competent sanitary engineer be engaged to lay out the entire town in a comprehensive system of sanitary sewers, and that the town construct the system as rapidly as finances would

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permit. Where sewage disposal is in pits, open to the air and polluting the soil, there typhoid fever will be. In all, twenty-four samples of water were analyzed from Cambridge City, and of this number fourteen were found to be badly polluted, two were suspicious, and the others passable.

Before the Township Teachers' Association I spoke upon "What Teachers Could Do to Benefit Pupils by Sanitary Methods." The address was very kindly received, and a resolution of thanks and confidence was passed.

Lafayette, December 5.—On account of an urgent telephone message from Dr. Hiner, County Health Officer, I visited Lafayette to settle a dispute in regard to the diagnosis of cases of smallpox. Upon arrival I found south of the city, in the country about three miles, a family of four, all afflicted with variola. Three of the cases were mild indeed, and the fourth could not be called severe. Quarantine was established, vaccination recommended, and all other precautions taken.

Delphi, December 12.—This visit was made to confer with the authorities in regard to needed public sanitary works. Delphi has an excellent water supply from deep wells, but no sewers. Sewage disposal is affected entirely by pits. The usual argument against this method was presented; also the usual advice given that the city employ an expert engineer to lay out the place in a comprehensive system of sanitary sewers, the same to be built as rapidly as finances would permit. The authorities were also urged to give strong support to the Health Officer in his efforts to raise the standard of public health.

In the evening I addressed the Oracle Club in the auditorium of the city high school. The title of the lecture was "Public Health Is Public Wealth," and was illustrated by lantern slides. The lecture was well received, and a vote of thanks given, together with a resolution of confidence in the State Board of Health and praise for its work.

REPORT OF TYPHOID FEVER EPIDEMIC AT CAMBRIDGE CITY, INDIANA, INVESTIGATED BY DR. HELENE KNABE.

Pursuant to the order of the State Board of Health, the undersigned went to Cambridge City, November 14, 1905, to investigate the epidemic of typhoid fever which had been reported from there. This investigation disclosed the following facts:

Cambridge City has a population numbering 1,700, is situated on White Water River, and part of the town is bisected by a small canal. The streets are fairly kept and reasonably dry.

There is no general system of sewage in this town, but some of the residents whose lots border on the canal have connected their stables and outhouses with the latter, and the sewage is washed into the water. These, however, represent only a very small percentage, and in the larger part of the town the surface privy is the only means for the disposal of filth. During the last summer this condition resulted in a singular boycott, because the farmers objected to having the vaults emptied into their property, and as a result the filth of the whole town accumulated for several months, unfortunately through the hottest season, when flies were plentiful. All the wells in Cambridge City are very shallow, usually from sixteen to twenty feet, penetrating only into the gravel and only protecting the people from drinking the immediate surface water.

At times, for instance during heavy rains, or when the river is high, the canal overflows and floods a large area of the tract surrounding the canal, including a lot upon which the garbage of the town is dumped. This place is very unsightly and malodorous at all times.

Cambridge City is supplied with water works, but this water is not used for drinking purposes, because the water from the canal occasionally gets into the pipes, badly polluting the supply. In fact, one of the cases sick at the present time is known to have been infected through drinking water which came through one of the water works pipes.

From the records of the Health Officer 1 learned that there had been two cases of typhoid fever reported during July. Another case was reported on September 1. These three cases soon recovered and I was not able to see the persons. At the present time there are eight cases in various stages of the disease. Four persons have recovered from slight attacks of typhoid fever, but I was able to make a positive diagnosis by the Widal test. Two deaths have occurred so far. Raymond Goodwin, who died October 15, and Mrs. Brier, who died November 10. Some of the cases can not be traced to any definite source, and it is my opinion that flies are responsible in these instances. The conditions surrounding some households are so unsanitary that they are a menace to the whole community. In one instance a family consisting of a father, mother and six children ranging in age from one to twelve years, live in a miserable little house made on the order of a woodshed, with a tiny kitchen added. The house has two rooms, one bedroom just large enough to hold two plain double beds and leave a space of two feet between beds and wall. The other room contains an old lounge, a stove, two chairs and a baby carriage, and is not large enough to accommodate the whole family at one time. Either one of the rooms has only one window, which, needless to say, is never opened. Bedding was given to the people a short time ago by the "Charity Organization of Cambridge City." The father, James Goodwin, and two of the children, Mary, ten, and Mamie, eight years old, are sick with typhoid fever. The children are recovering, while the father was at the height of the disease at the time of my visit. The whole house is in an extremely filthy condition. The way these people live is best shown by a remark which one of the children made

some time ago when asked if Mamie slept alone, as the physician had directed. The child said, "Oh, yes, nobody sleeps with her except mama, baby and my other sister."

The surroundings of this house are as bad as they can possibly be. A very dirty hogpen and an outhouse in even a worse condition are about sixty-five feet away and on a considerably lower level than the well, which is a few feet from the house. The ground is strewn with filth for many feet around. These people did not disinfect anything, even though the physician who attended the case stated that he gave them disinfectants and instructed them in their use.

The schoolhouse of Cambridge City is a three-story brick, in which nine rooms are used for teaching purposes every day. It is heated by furnace, but there is no system of ventilation. The rooms on the third floor are used for the high school pupils and the lower grades are on the first and second floors. I also inspected the outhouse, finding it in a very unsanitary condition. There is no system of flushing it and the odor was very bad. It was stated that disinfection was practiced twice a week, but I advised that it be done every day regularly. The vault is cemented and connected by a pipe with the river. A sample of water from the well in the school yard was collected for examination.

During my stay at Cambridge City I made inspections at different houses situated at a low level, and found in two of them patients suffering of tuberculosis. Another case of suspected tuberculosis was referred to me by one of the physicians for diagnosis. The physical, as well as the examination of the sputum, showed the case to be far advanced. Two other cases suspected of having typhoid fever gave negative Widal reaction.

On Friday, November 17, I inspected the Suuny Side Dairy, managed by Mr. Moffitt. The stable was in bad condition, lacking the gutter. Horses were kept in the same stable and the ground in front of the door was soaked with the seepage from the stable, making it almost impossible to get into it. A very dirty trough was used to water the cows. milk cooler as well as the buckets and bottles, are kept in a box outside the house, where they, of course, will be aired well, but are also open to the dust. The well is near the house and only about 35 to 40 feet away from a privy that is no credit to the owner of the place. I went also to the Jersey Dairy, in charge of Mr. Coop. The place is situated on a high ridge and the surroundings as good as could be required. The stable gives shelter to twenty-five cows. In one corner of the large square building some horses were kept, but they are entirely remote from the cows. The cows are watered from a spring in the woods, which is well protected and is not likely to be polluted. The milkhouse is scrupulously clean and is provided with a cooler according to the law, and the whole place is kept as well as can be under the circumstances. Mr. Coop asked to be given a copy of the rules of the State Board of Health governing the operation of dairies.

Summary.—Number of patients visited, eighteen; cases of typhoid fever, twelve; tuberculosis, three far advanced cases and one incipient case; lagrippe, two; Widal tests, seven; positive, five; negative, two; dairies inspected, two; one schoolhouse inspected; samples of water sent to Laboratory of Hygiene, ten; many typhoid circulars distributed.

THE THIRD ANNUAL HEALTH OFFICERS SCHOOL FOR TOWN OFFICERS.

The third Annual School for Town Health Officers was held in Indianapolis December 14 and 15. All town officers were summoned as usual and attended. The Claypool Hotel was head-quarters, and all sessions were held in the auditorium of the hotel. The first session was promptly called to order December 14, at 10 a. m., by Dr. F. A. Tucker of the State Board of Health. The first paper was entitled "Insects and Disease," and was read by Dr. Hurty. This paper was discussed for fifteen minutes, and then a lecture was given by Prof. Severance Burrage, entitled "The Science of Disease Prevention." The conference adjourned at 12:15 to visit the laboratories and to call upon the Governor at 2 o'clock.

The Governor received the health officers very graciously, shaking hands with each one, and made a short speech in which he particularly urged them to make every effort to collect accurate vital statistics, for, said he, "Accurate vital statistics are of the greatest importance to the State, and they furnish the particular foundation upon which must stand disease prevention work." Dr. Tucker read a paper entitled "The Prevention of Tuberculosis," which was discussed at length. Dr. Tucker's essay dealt with the extent and destructiveness of tuberculosis in Indiana; it exhorted the officers present to thoroughly inform themselves in the important public movement against tuberculosis; to inform themselves in the early diagnosis of the disease, and to spread among the people the knowledge that in its early stages consumption is one of the must curable of maladies. Dr. Davis then read a paper entitled "The Air We Breathe," which was also discussed with interest. This paper briefly and clearly reviewed the extent and character of the atmosphere and its very great importance to health. This paper was remarkable for concentration, and contained enough points and facts to serve the general writer for several papers. Dr. Knabe read a paper entitled "A Laboratory View of the Infectious Diseases." In this paper Dr. Knabe told the officers how the infectious disease problem looks from the laboratory. She made plain how great the service was which the laboratory could render in the early diagnosis of diseases. The session closed with another lecture from Prof. Burrage continuing the subject of the forenoon. Prof. Burrage is an excellent teacher, and presents his ideas clearly, and he made plain to his hearers the fundamental principles of disease prevention.

The evening session was called to order at 8 p. m. by Dr. Davis. Reports of health officers were listened to for an hour and a half, five minutes being allowed to each officer. At this point Dr. Davis suspended the reports until the next session to hear a lecture by Prof. H. E. Barnard, Chemist of the Board, entitled "Polluted Water in Indiana." Prof. Barnard reviewed the water work so far done in the laboratory, and made plain the benefits derived therefrom. He reported that the laboratory was now making a sanitary survey of White River, and within another year expected to have maps, analytical tables, and a full history showing this system as it now exists and giving its probable future usefulness. Prof. Barnard said that one of the great problems in Indiana today was that of the prevention of stream pollution.

The fourth session was called to order at 9 a.m. December 15 by Dr. Davis. Dr. T. Victor Keene, Superintendent of the State Laboratory of Hygiene, gave a lecture entitled "Experiences in Sanitary Work in Indianapolis." In this lecture Dr. Keene related in detail the experience of the Indianapolis Health Department in its efforts to secure pure milk and pure water. He also told many interesting and instructive experiences in medical school inspection in the management of infectious diseases. lowing this, Prof. Barnard gave a lecture, "Food Adulteration in Indiana." Prof. Barnard reported that to date over 1,000 samples of foods and drugs had been examined, and 49 per cent. were found not up to standard or adulterated. Of 132 samples of vanilla, only 11 met the standard. Of 145 vinegars, only 12 proved to be what they were sold for. Of 58 samples of lime water purchased in various parts of the State, only 33 were found up to standard. Prof. Barnard truly stated this was a deplorable condition, and it should be righted as soon as possible. After Prof. Barnard's paper on "Food Adulteration in Indiana," and after some discussion, the following resolution was adopted:

Whereas, The members of this Association, being fully aware of the victousness of food adulteration, both as an insidious attack on the

public health and as an economic fraud, and realizing the necessity for a National Pure Food Law to control interstate commerce in foods, and believing that such a law would relieve the conditions which make Indiana a dumping ground for the products of other states;

Resolved, That this Association urge the Senators and Congressmen of this State to use their strongest efforts to secure the passage of the Heyburn bill.

Unanimously carried.

The next order was a lecture entitled "The Tuberculosis Sanatorium," by Dr. H. H. Cowing, Health Officer of Delaware County. Dr. Cowing had lately visited the various sanatoria in the East, remaining for some time at the Adirondack Cottage Sanatorium, which institution was founded by the well-known Dr. E. L. Trudeau. Dr. Cowing reviewed the disposition and methods of cure by the outdoor life, plain food and regular living. In conclusion, he exhorted the health officers to keep constantly in mind the necessity of a State Tuberculosis Sanatorium in Indiana, and that they lend their fullest influence and efforts to secure the same. The exercises closed with a lecture by Dr. W. T. S. Dodds, of Indianapolis, upon "The Early Diagnosis of Consumption with Clinic." Dr. Dodds said that physicians did wrong to wait for the appearance of the classical symptoms of tuberculosis, but they should tell the patient of his affliction. The cure of tuberculosis, he said, depended largely upon discovery of case when in its early stages. The early symptoms were: "tired feeling," accelerated pulse, rise of temperature in the afternoon, with possibly sub-normal temperature in the morning, a dry, hacking, or rather an unproductive cough, for there is really no such thing as a dry cough. Even in apparently dry, hacking coughing, the patient sprays droplets of spittle into the air. If, with these symptoms, there is a loss of weight, and even if the sputum does not show the presence of an organism, and unless it is positively known that the said symptoms are due to other causes, it should be assumed that incipient tuberculosis exists.

As usual the attendance at the close had grown very small, but those who remained were enthusiastic, and from every indication one would judge they desired to hear more. Several officers took occasion to remark that this was the best conference or school they had so far attended.

REPORT OF THE INVESTIGATIONS AT MIDDLETOWN, INDIANA, SUSPECTED PTOMAINE POISONING.

By Dr. Helene Knabe.

I was sent to Middletown December 12 to investigate some cases of suspected ptomaine poisoning which had occurred at the Welsh Hotel November 30, after the guests had partaken of a hearty dinner.

On my arrival I visited Dr. Waters, the Health Officer of the town, who was one of the guests at that dinner and made sick at that time. The doctor was kind enough to furnish me with a list of the names of the persons which were sick with what seemed to be poisoning, and he also gave a very clear history of the state of affairs as they occurred November 30. I found there were about twenty-four cases at the hotel and twelve cases outside. The persons who are named in the following list, "outside cases," had not come in contact with anybody from the hotel, nor had they obtained any food from there. Still the symptoms are identical with those at the hotel and in some of these cases they were very severe. The time during which this sickness appeared was the week from November 26 to December 3.

The list of cases in their order of occurrence is as follows:

November 28-

At Hotel: *Lamb, Leon (waiter).

November 29, 8 to 12 p. m.-

At Hotel: *Bicksler, Mr.; *Biliott, E. L.; *Waters, Dr. S. C.; *Welsh, Mrs. Anna (owner of hotel), slightly sick next night; *Munden, Mrs. (cook), sick three days.

Outside Cases: Fink, boy, age five, mild, no diarrhea; *Snellenberger, Mr.; *McKenzie, Mrs., mild case; *McKenzie, Mr., severe case; *Wallace, Dr., severe case; *Tykle, Mrs., severe case.

November 30, 3 to 8 p. m.-

At Hotel: *Kent, Mrs. (landlady); *Burk, Marion (waiter); Jackson, Olla (waiter), sick next morning; *Munden, boy, ten years (the cook's son); *Cooper, Frank; *Cooper, Edna; *Cooper, Carrie, mild; McRoy, Mr.; Pritchett, boy, age ten years; *Miller, E. P.; Daniels, J. E., took dinner to nurse who did not get sick; Levy, Mr., mild; Levy, Mrs.; *Waters, Mrs., immediately after dinner went to Indianapolis, taken sick there at 7 p. m.; Boarder (traveling man), taken sick at noon; *Wright, Miss Sarah (laundress), taken sick at 11 p. m.; *Bicksler, Mrs.

Outside Cases: *Cassada, John; Hodson, Gertrude; *Moore, Mr. (works in restaurant).

December 3-

Outside Cases: *Wood, Mr., severe; Wood, Lee, severe; Young Man. *Cases seen by Dr. Knabe.

The attacks in every case began very suddenly with vomiting and purging. Most all of the cases at the hotel commenced shortly before supper on the evening of November 30. In all cases the prostration was pronounced and strychnine and nitroglycerine had to be given hypodermically. Dr. Waters, who had been sick the day before, attended the people at the hotel. Some of the patients complained of severe cramps

in arms and legs, and in the cases of Mrs. Welsh, Mr. Daniels, and Mrs. Bicksler these cramps appeared in the slightest over-exertion every day since. Dr. Thornburg, who treated Mr. Daniels during his attack stated that the vomitus of the patient was of a decided pink color, resembling that of a weak solution of Potassium Permanganate. During my stay at the Welsh Hotel I endeavored to find out the ways in which food is prepared there, but nothing that is not in keeping with the laws of cleanliness was to be seen anywhere. Mrs. Kent is always in the kitchen during meal time and supervises everything. The cooking utensils are of enameled ware and a few frying pans of the ordinary kind are also in use. All dishes and cooking utensils are kept very clean and the same can be said of the cupboards and, in fact, the whole house.

The menu for the Thanksgiving dinner consisted of roast turkey and duck, potatoes, celery, stewed cranberries, oyster dressing and ice cream. The fact that three guests for dinner and one for supper, as well as the landlord, Mr. Kent, and the chambermaid, did not get sick, though they had eaten of all the victuals which were provided, makes it doubtful that the cases were food poisoning. The question was raised that it might be the work of a person who desired to bring the hotel into disrepute, but as Mrs. Kent is always there before meal time and stays in the kitchen until all guests are served, makes it rather difficult to see how anyone could get at the food without being seen by her.

The cases that occurred in Middletown during that week are so much alike to those in the hotel, showing the same symptoms, viz.: vomiting, purging, profound prostration and remarkably quick recovery. The cases on the list marked with a star I have seen personally, and of the others the history was given by the attending physician, and all cases outside of the hotel I have carefully traced as far as possible and excluded any connection with the cases in the hotel.

The people at the hotel had not eaten the same food in the same amount and many of those who became ill had eaten very sparingly, while of the ones who escaped the trouble some had eaten heartily. There seems to be no ground to think the ice cream caused the sickness, because some cases occurred before Thanksgiving dinner, when they did not eat any cream. The same reason would rule out the oyster dressing and the vegetables; also no canned entables were used and all the guests did not eat of every one of them. Also the fact that with the exception of two of the patients none that had been sick on November 29 was sick again on November 30. For Mrs. Welsh's case there is also an explanation, because this lady is in some legal difficulties and thought she was poisoned by her antagonist; she is very nervous and naturally would not get well so quick.

It is impossible for me to come to a solution of the question, and as in no cases vomit was saved the examination of which would probably have given a clue to the cause of the trouble, I can not see how it is to be settled definitely.

During my stay at Middletown I visited the schoolhouse. It is a brick structure containing six rooms. The water is supplied by the public water works of the town, and the building is heated by steam. The schoolhouse is supplied with toilet rooms for the girls, which are in the

basement and are in good condition, there being one of the usual public toilets with automatic flushing system. The toilet rooms for the boys are on the same order and some distance away from the main building.

While inspecting the room in which the smallest children are taught, I noticed that many of the children had bad colds, and the teacher stated that many of them had stayed home a few days, and at the time of my visit five were away. Inspection of the throat did not show anything alarming. The pharnyx was pale, tongue very slightly coated and the papilla reddened, giving the appearance of a mild degree of the so-called "strawberry" tongue. There was a hollow cough, entirely unproductive, present in all cases affected, and slight coryza. I spoke to Dr. Waters about it, suggesting that it might be a mild epidemic of scarlet fever, and he promises to watch for any cases developing among other children.

Some cases of a skin disease that seem to have been brought there from Anderson proved to be scables, and the treatment which the doctor has given is making an end to that.

In closing I would like to call attention to the unsanitary condition of the waiting room in the Terminal Station at Anderson. There is no ventilation except when the door is opened, and the appearance of the floor under the cases of a candy department that is in the front part of the room was anything but sanitary.

HYGIENIC LABORATORY.

The Bacteriological and Pathological Laboratory is now in full operation. Dr. Keene commenced regular work January 1, 1906. Prior to this Dr. Keene gave considerable time to the making out of lists for apparatus, furniture, etc., also in arranging the laboratory. Outfits for collecting samples of sputum and blood, and for diphtheria cultures have been sent to all applicants, and to January 1 the following examinations have been made:

EXAMINATIONS MADE IN DIVISION OF BACTERIOLOGY AND PATHOLOGY UP TO . AND INCLUDING DECEMBER 31, 1905.

	Positive.	Negative.	Total.
Tuberculosis	59	20 .	79
Typhoid	22	4	26
Diphtheria	30	15	45
	•		150

CHEMICAL LABORATORY.

The analyses made to date are published in the monthly bulletin for November, and following is a summary:

SUMMARY.

Foods.

•		Number		
	Number Found	Adulterated or Varying	Total	Percentage
	to be of	from	Number	of
Articles Examined.	Good Quality.	Legal Standard.	of Articles Examined.	Adulera- tion.
Butter	4	• 4	8	50.0
Cream	28	18	46	39.1
Milk	225	57	282	20.2
Lard	5	7	12	58.3
Olive oil	65	40	105	38.1
Oysters	21	5	26	20.0
Sausage	36	67	103	65.0
Miscellaneous meat products	10	7	17	41.0
Codfish		4	4	100.0
Cream of tartar	107	1	108	1.0
Lemon extract	15	214	229	93.4
Vanilla extract	11	121	132	91.5
Vinegar	12	133	145	91.7
Miscellaneous food products	. 19	1	20	5.0
Total food products	558	679	1.237	54.97
I	rugs.			
Alcohol	63	32	95	37.6
Lime water	33	· 25	58	43.1
Tr. of Iodine	2	19	21	90.5
Total	98	76	174	43.6

The following table shows the status of smallpox for the quarter:

October, 1904		Deaths.	No. o. Counties Invaded. 29
October, 1905	. 0	0	0
November, 1904	. 355	12	37
November, 1905	. 84	0	5
December, 1904	. 472	8 .	38
December, 1905	. 112	1	13

By the above table comparison shows: Cases decreased 81 per cent.; deaths decreased 97 per cent.; area invaded decreased 82 per cent.

Ordered, That the Secretary's report be spread of record.

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AMERICAN TIN PLATE COMPANY.

The following letter was read by the Secretary: Hon, Board of Health of Indiana, Indianapolis, Ind.:

Gentlemen—We hereby respectfully request that you renew our permits for emptying into streams waste water, etc., from our several plants in this State, comprising the following: Elwood, Anderson, Gas City and Muncie.

Yours very truly,

THOMAS O'BRIEN, District Manager.

After discussion it was ordered that the permits of last year be renewed.

ORDERED.—The Secretary was given permission to purchase certain supplies for the Bacteriological Laboratory, a partial list of which was presented.

SPECIAL MEETING.

March 7, 1906.

Called to order by President Davis at 10 a. m.

Present: Drs. Davis, McCoy, Wishard, Tucker, and Hurty.

President announced the special meeting was called to consider sanitary surveys of three schoolhouses, as an urgent demand had been made by citizens.

SCHOOLHOUSE AT WINGATE.

Survey.—This is a two-story slate roofed brick building built about 1890. It contains four recitation rooms, four cloak rooms and two halls. Main building 37 by 52 feet. Hall 17 by 18 feet, outside measurement. Basement under main building about 6½ feet, with dirt floor. Two furnaces are used to heat the building, and their foundations had to be dug about 18 inches below the level of basement floor to set them up. Even with that, they are too close to the floor above, and there is danger of setting fire to the building, as the joists above them are charred and blackened with the heat. The walls of the building are built solid from the foundation, with no stone or slate between the basement and main building to check the rise of moisture.

The schoolrooms are 25 by 34 feet, with 14-feet ceilings in lower and 12-feet ceilings in upper rooms. Each room has a four-foot cloak room attached. There are ventilators in each room connected with the basement for the supply of fresh air, and

opening into the attic for the outlet of the foul air, but are not satisfactory. The teachers state that they have to open the windows to air the rooms, and that if the windows are open in one room, they can not keep the other rooms warm. (Many of the pupils were wearing wraps in the room that day.)

The rooms are papered, but owing to the moisture in the walls the paper is coming off badly in every room. The plastering is badly cracked in the two lower rooms, the west upper room and both halls. The floors are badly worn in the lower rooms and will need repairing next fall. The windows have good blinds; the floors are oiled and clean, the seats in good shape and of height to suit the pupils. The stairway is 5 feet wide to a 7-foot landing, then divides into two 3-foot reverse stairways to the hall above.

The janitor stated that it was impossible to keep the rooms warm on cold, windy days, and that school had to be dismissed last year for several days on that account; he said that moisture would accumulate on the walls in cold weather so that the paper would come loose and the water run down to the floor. In wet weather that water came into the basement, making it very hard to keep the furnaces going, although it had never gotten into the fireboxes. He also stated that the ringing of the school bell or slamming of the front door to the hall would shake the whole building. He did not consider the building dangerous.

The enumeration of pupils is 190. There are three and one-half school districts attending this school now, and if more room was available there would be two and one-half more that would be brought there. There are five teachers—four in the school building and one in the town hall, which is being used as a school-room for the overflow pupils. The Trustec, Mr. H. T. Van Cleave, states that he will have to add more rooms to or rebuild the schoolhouse or repair and practically rebuild three others in the county districts. He thinks it economy to tear down this building and put up a modern one that will accommodate all the pupils in one school. He also says the township is out of debt and can build.

- H. M. Dickinson, Principal, stated the building was unsanitary, could not be properly heated and was too small and could not be remodeled to advantage.
 - J. M. Allhands, Assistant, stated same as above and also said

there had been a great deal of sickness from colds and sore throat in his room, which he was sure was caused by dampness of the walls and the impossibility of keeping the rooms at a uniform temperature.

- Dr. T. H. Allhands, Health Officer, has had two cases of pneumonia and several cases of tonsilitis among the pupils that he considers as directly traceable to the unsanitary condition of the school building.
- R. N. Cordig, Member of Town Council, thinks the building is wholly inadequate to the needs of the school, that it is unsanitary, improperly constructed, and can not be remodeled economically, and advises that a modern sanitary building be erected.
 - J. A. Long, Postmaster, endorses Mr. Cordig's views.

Summary.

The building is unsanitary, improperly constructed, can not be remodeled or added to economically, and it is respectfully recommended that it be condemned for school purposes to take effect at end of present school term.

After full consideration the following proclamation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at Wingate. Montgomery County, Indiana, is unsanitary and unfit for housing school children; therefore, it is

Ordered, That said schoolhouse is condemned and shall not be used for school purposes after April 1, 1906.

Any violation of this order shall be promptly prosecuted by the Attorney-General according to the statutes provided.

SCHOOLHOUSE AT CLAYTON.

Survey.—This is a two-story brick, with belfry tower, containing four rooms 27x28 feet, two recitation rooms 12x22 feet, two halls and one 5-foot stairway. The building is well lighted and kept in neat, clean condition. Walls are painted and papered, good blinds at the windows and heated by soft-coal stoves in each room. Ventilated by doors and windows. Was built in 1883. The chimney at the south end of the building is split at the top for two or three feet and the wall is cracking and bulging outward at the junction of the upper and lower rooms. The brick in the

walls is very soft and could be easily broken and crushed and shows by its freshly broken condition that the whole wall on the south end is in danger of collapse. There is an iron rod run through the walls over the door of the entrance hall to keep them from collapsing and the wall is badly cracked to the belfry tower. There is no basement under the building, but a coal cellar has been dug under the northwest corner. The trustee who had this work done failed to build a wall under the foundation of the building, and as the water runs into the cellar whenever it rains, this corner of the building has settled and threatens to give down. A person jumping up and down in one of the upper rooms causes the whole building to quiver and windows and doors to rattle. The floors in the schoolroom are worn out, and it must be refloored, and the halls in one or two rooms need replastering.

The enrollment is 194. There are five teachers and the high school course. The room used for the high school course contained 70 pupils. There are three districts combined in this school and the Trustee desires to bring in one or two more, or otherwise he will have to rebuild two one-room houses. The schoolyard contains two and one-half acres of ground and is well adapted for the purpose. The water closets are screened and have dug vaults. There are no walks to them.

A talk with Mr. Miller (a member of the Advisory Board) and others shows that the citizens consider the building unsafe for use. Dr. A. K. Gilbert, Township Trustee, stated that he had an architect furnish an estimate of cost of adding two rooms and remodeling the building, and that it would cost about \$6,000 to do the work.

It is respectfully recommended that the building be condemned as absolutely dangerous to life as well as unsanitary.

After full consideration the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at Clayton, Hendricks County, Indiana, is unsanitary and unfit for housing school children; therefore, it is

Ordered, That said schoolhouse is condemned and shall not be used for school purposes after April 1, 1906.

Any violation of this order shall be promptly prosecuted by the Attorney-General according to the statutes provided.

SCHOOLHOUSE AT AVON.

Sanitary Survey.—The building is a four-room, two-story brick with a slate roof. No basement. It was built in 1880, but burned down and was rebuilt in 1885 and an additional story added. The walls of the lower story are about 14 inches thick and the upper walls about 9 inches thick. The walls are beginning to crack and split open around the windows and doors. rooms are 211/.x30 feet. There are two halls 10x30 feet and a single narrow stairway. No cloakrooms and no heat in the halls. The partition wall between the two lower rooms is cracked from bottom to top and beginning to open. The floors are worn out and full of cracks and the rooms all need replastering. building is heated by two "Johnson's Ideal heater and ventilator furnaces," one in each lower room and heating the room above by a hot air pipe. There are ventilators in the floors of the lower rooms besides the ones connected with the heaters, but they have to be kept closed, as it is impossible to warm the rooms when they are open. There are no ventilators in the rooms above. walls have been painted, floors oiled and blinds at the windows. Desks in fair condition and of suitable heights for the pupils. The building has been well taken care of. The water closets have good gravel walks leading to them and are screened. There is a good frame barn about 30x60 feet on school lot. The location of the buildings is bad, the ground being low and without any outlet for drainage. The Danville and Indianapolis interurban line runs within fifty feet of the front door, having taken sixteen feet off of the school ground for right-of-way. .

The enrollment of the pupils is 135, there being five districts combined in one school. There are four teachers. Mr. E. E. Blair, Township Trustee, reports the township out of debt.

Summary.

The building is old, improperly constructed, and is unsafe and unsanitary at the present time. If repaired, will have to be strengthened, newly floored and plastered, and two additional rooms built to accommodate the number of pupils in attendance. The location is very bad, being so low that it is surrounded by water in wet weather, and there is no means of drainage. I

would respectfully recommend that the building be condemned and a new one be erected in some better location.

Inspection made February 1, 1906.

After full consideration the following proclamation order was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse number 6 at Avon, Hendricks County, Indiana, is unsanitary and unfit for housing school children; therefore, it is

Ordered, That said schoolhouse is condemned and shall not be used for school purposes after April 1, 1906.

Any violation of this order shall be promptly prosecuted by the Attorney-General according to the statutes provided.

Ordered, That the next lot of report blanks for reporting births and contagious diseases be so arranged that three birth blanks be inserted for one contagious disease blank.

Ordered, That when a new lot of death certificates be printed that the word "chief" be stricken out in the phrase "chief cause" and inserting "immediate," making the phrase read "immediate cause."

Committee.—Upon suggestion of the President, Drs. Wishard and McCoy were appointed a committee to report at the next meeting on the advisability of requiring that certificates of births and deaths be reported occurring prior to the seventh month of gestation.

PROPOSAL FOR CO-OPERATION.

The following letter was read:

Department of Interior,
United States Geological Survey,
Hydrographic Branch,
Washington, D. C., January 30, 1906.

Dr. J. N. Hurty, Secretary State Board of Health, Indianapolis, Ind.:

Dear Sir—During my visit to your office on January 20th the proposition that the Geological Survey enter upon co-operative work with the Indiana State Board of Health was discussed briefly. It seems desirable to enter upon some negotiations with the object of bringing about some mutual arrangement whereby investigations of the character of stream waters of the State of Indiana may be carried on during the fiscal year beginning July 1, 1906.

There are several lines of investigation which would be profitable and beneficial to the interests represented by both parties above mentioned.

4-Bd. of Health.

The first is a general investigation of the character of the water flowing in the streams of the State. The principal purpose of such work will be to determine the water resources and their damage by pollution. It is a generally accepted idea that waters in streams which drain inhabited countries are not constantly fit for domestic consumption in their raw state. In observing conditions in Indiana during the past few years it has become the conclusion that all of the Indiana drainage areas are at one or more points densely populated. Therefore, the above contention is true for the entire State. Accepting these premises, it is apparent that the cities using surface waters must eventually provide means for their purification. It is also true that the larger cities of Indiana must, for many reasons which will not be reviewed here, eventually take their supplies from the running streams. It follows that one of the most useful lines of investigation will be to determine the character of such waters and their variation from day to day, so that there will be on hand just the data necessary for the intelligent installation of purification systems. The determination most useful in such cases are turbidity, color, odor, total solids, suspended solids, lime, magnesia, iron, sodium, potassium, chlorides, sulphates, carbonates and bicarbonates. The usual practice in such an investigation as is here proposed is to establish permanent sampling stations at chosen points along the rivers and to have forwarded from such stations 4-ounce samples of water each day. These samples when received at the laboratory are then stored in larger bottles, each station being represented by a storage bottle in the laboratory, until a sufficient amount is accumulated to make it advisable to determine the ingredients and characteristics above noted. Such a result will represent the composite of the various samples. Generally such analyses are made every week or ten days.

If this arrangement is desirable an appropriation could be made by both parties. That made by the Survey could be expended in salary for a chemist to be furnished by the Survey, while the State appropriation could be expended for the salaries of local observers and for such transportation charges and laboratory equipment as would be found necessary, adjustments being made at the end of the year, so that the expense of each party could be equal. This is a very simple plan and of undoubted benefit. Its usefulness, however, is confined more or less to the future when the cities decide to provide water purification systems.

Another plan would involve an investigation of the pollution of the streams, that is, a determination of the effect of sewage and industrial wastes, and the extent of their influence down stream. You will note that such an investigation would be directed more exclusively toward sewage disposal than water supply. It seems as though under the prevailing conditions in Indiana this would be a more immediately useful work than that previously described. It would also involve investigations concerning the effect of various industrial wastes and the best methods of disposing of them or recovering valuable ingredients therein, which in practice has the same final result. Under such an arrangement the Survey would provide a man who would do practically all the field work and a part of that in the laboratory, while it would make use at the same time of some of the laboratory assistants which you have already provided.

It is hoped that you will give this matter your consideration and present it to the Board of Health for action if it is deemed wise.

Very respectfully,

M. O. LEIGHTON,

Hydrographer in Charge. Division of Hydro-Economics.

After consideration, it was moved by Dr. Davis, that, inasmuch as the means now at the command of the Board would not admit of co-operation as proposed, therefore, the Secretary should inform Mr. Leighton and say that the Board would present the matter to the next General Assembly and ask for a special appropriation for making sanitary stream surveys.

HAM PEDDLING.

Ordered, That the following letter should be sent out to all county health officers:

WARNING.

Dear Doctor—Men from Chicago dressed like farmers have been caught selling tainted hams in Indiana. They buy tainted hams from the packing houses, doctor them up, ship them to any point, then hire horses and wagon and peddle them at 2 to 3 cents under the market. The hams appear to be all right until slices are put into the frying pan, and then the taint fills the kitchen. The meat is unfit to eat. Many of these tainted hams were sold in Columbus, Greensburg, Mt. Vernon and other places. At Franklin one T. Scantlan was arrested upon information from Columbus, but was released on bail and disappeared.

Please inform the sheriff, city and town health officers and police authorities to be on the watch for ham peddlers. Also make the matter public in the papers.

P. S. The Laboratory of the State Board of Health is open for free food, drug and water analyses, also for free bacteriological and pathological examinations. Rules governing laboratory free work enclosed.

SECOND QUARTER.

Regular Meeting.

AFFAIRS CONSIDERED OF THE FIRST CALENDAR QUARTER OF 1906 AND THE SECOND FISCAL QUARTER OF 1906.

April 13, 1906.

Present: Drs. Davis, Wishard, McCoy, Tucker and Hurty. Called to order by President Davis at 2 p. m.

Minutes of the last regular and special meeting of March 7th read and approved.

Report of the Secretary for the first calendar quarter called for and read as follows:

REPORT OF SECRETARY.

The statistics show for this quarter a marked diminution in diseases and death as compared with the same quarters in all of the statistical years beginning 1900. The death figures appear in the appended tables, also the prevalence of disease. Smallpox during the quarter shows a decided decrease, and the special table for this disease makes this plain.

January, 1905	Reported.		No. of Counties Invaded. 27
January, 1906	. 80	0	10
February, 1905	. 381	8	35
February, 1906	. 152	0	15
March, 1905		1	29
March, 1906	. 124	0	16

By the above table comparison shows: Cases decreased 59 per cent.; deaths decreased 100 per cent.; area invaded decreased 55 per cent.

VISITS AND INSPECTIONS.

The Secretary during the quarter made five visits in answer to urgent invitations and herewith are full accounts of said visits.

REPORTS OF VISITS AND INSPECTIONS DURING THE QUARTER.

Rushville, January 9th.—The Secretary visited Rushville on this date to confer with Prof. William O. Headlee, County Superintendent, and the trustees of the county in the same way as set forth in the records of the visit to Connersville, and the same work was done and the same results secured as were so happily accomplished at Connersville. While there, W. H. Smith, city health officer, called my attention to a case of sickness which followed the administration of Dr. Hand's cough and croup cure. Accordingly a bottle of this medicine was purchased and examined in the laboratory. The symptoms recorded by Dr. Smith were those of the action of morphine, and so the medicine in question was examined for this drug. The analysis showed morphine to be absent and the depressant action noticed was, I believe, due to the presence of lobelia.

Lebanon, January 20th.—On the above date I visited Lebanon to address the Boone County Teachers' Association in regard to the public health work of the State Board of Health, and to confer in regard to school sanitation in that county. In addition to eighty teachers, there were present many citizens. The usual phases of the subject were gone over and a promise was given by a rising vote of all teachers present, that they would study the contagious disease circulars of the State Board of Health, and from time to time teach their contents to their pupils.

Connersville, January 25th.—The Secretary went to Connersville to attend the meeting of the sixth Councilor District of Physicians, to read a paper in regard to the work of the State Board of Health and to discuss the "Combat Against Tuberculosis." The meeting was very successful and was largely attended, and the Secretary believes that good results followed his visit. Advantage was taken of the visit to call upon the County Superintendent, Prof. Calvin Ochiltree, and arrange with him to later meet the trustees of the county and, if possible, effect an organization for health work in the schools. Prof. Ochiltree was very

much pleased to enter the work and agreed to call a meeting of the trustees on February 5th.

Connersville, February 5th.—In accordance with the arrangements made with Prof. Ochiltree on January 25th, I visited Connersville and met the trustees of the county whom he had kindly called together. School hygiene was fully considered in general conference and the following work was recommended to the Trustees:

That they should, as soon as possible, put all their schoolhouses Windows were to be fixed so that in first-class sanitary condition. they could be raised and lowered for purposes of ventilation. Doors were to be properly fitted and valve ventilators put into outside doors where transoms did not exist. Schoolrooms heated with stoves were to have jackets placed around the stoves, and teachers were to be instructed in thorough ventilation. agreed that trustees would order their teachers in cold weather to watch the students carefully, and if any of them should show sleepiness or heaviness, work would stop, and windows would be raised and the students marched around the room or given arm exercises while the air was being changed. It was also agreed that the water supplies would be looked after very carefully and that water buckets and tin cups would be entirely banished. Each trustee was asked to supply the address of his teachers to the State Board of Health, and there would be sent to them one of the envelope packages containing circulars upon the prevention of various diseases. The teachers were to inform themselves in regard to the contents of said circulars and at appropriate times teach from them to their pupils. Every one of the trustees expressed himself as highly pleased with the ideas advanced and all promised to do the very best they possibly could for the health of the school children under their charge.

Evansville, March 25th.—On this date I visited Evansville in order to deliver a public lecture upon the work of the State Board of Health and general hygiene. The visit was made upon invitation of the Mayor and the Monday Club. A large audience was in attendance which entirely filled and crowded the floors and gallery of Grace Methodist Church. The lecture was well received and a vote of thanks was passed. I believe much good will result from this visit.

A notable event concerning hygiene in the State occurred in Indianapolis during the week commencing March 5th. This was the Indiana Tuberculosis Exhibition, held in Tomlinson Hall.

The exhibition was essentially the same as was presented at New York, Philadelphia, Boston and Newark. It came direct from Newark to Indianapolis and from here it went to Chicago. The exhibit was under the direction of the Indianapolis Board of Health and the Indiana State Board of Health and was open every day and evening for one week. The program was as follows:

EVENING PROGRAM.

Opening Exercises, Monday, March 5th, 8 p. m.

Governor J. Frank Hanly, presiding.

The exhibition was formally opened by Hon. Charles A. Bookwalter, mayor of Indianapolis.

Address, Mr. Chas. R. Williams, editor of the Indianapolis News.

Tuesday, March 6th, 8 p. m.

Mr. John H. Holliday, presiding.

Address, "Sociological Importance of Tuberculosis," Dr. John W. Mc-Caskey, Fort Wayne.

Wednesday, March 7th, 8 p. m.

Hon. John W. Kern, presiding.

Address, "The Hospital and the Sanatorium a Necessity in the Combat Against Tuberculosis," Dr. Hugh A. Cowing, Muncie, Ind.

Thursday, March 8th, 8 p. m.

Mr. Andrew M. Sweeney, president State Life Insurance Co., presiding.

Address. "The Open Air Treatment of Consumption," Dr. J. W. Pettit, Ottawa, Ill., director of the Ottawa tent colony.

Friday, March 9th, 8 p. m.

Hon. Charles Henry, presiding.

Address. "What Well People Should Know About Tuberculosis," Dr. Geo. T. McCoy, Columbus, Ind.

Saturday, March 10th, 8 p. m.

Hon. Hugh T. Miller, Lleutenant-Governor, presiding.

Address, "Municipal Control of Tuberculosis," Dr. Arnold Klebs, Chicago.

Address, "The Promise of Victory Over Tuberculosis," Dr. Robert Babcock, Chicago.

AFTERNOON PROGRAM.

Twenty-Minute Talks.

Monday, March 5th, 4 p. m.

"What is Tuberculosis?" Dr. Frank B. Wynn, Indianapolis.

Tuesday, March 6th, 4 p. m.

"How to Make Home Safe Against Tuberculosis," Dr. J. C. Blossom, Mt. Summit. Ind.

Wednesday, March 7th, 4 p. m.

"Tuberculosis a House Disease; It is Infectious but not Contagious," Dr. R. H. Ritter, Indianapolis,

Thursday, March 8th, 4 p. m.

"What I Saw at a Tuberculosis Sanatorium." Dr. Wm. George, Indianapolis.

Friday, March 9th, 4 p. m.

"The Sanatorium Treatment of Beginning Tuberculosis," Dr. Theo. Potter, Indianapolis.

Saturday, March 10th, 4 p. m.

"Tuberculosis Work of the Charity Organization," Dr. C. S. Grout, secretary, Indianapolis.

The total attendance was 5,128. All lectures were well attended. On Saturday night, when Dr. Klebs and Dr. Babcock spoke, and Lieutenant-Governor Miller presided, it was necessary to move some of the exhibit and place additional chairs to seat those in attendance. Ten thousand circulars concerning the prevention of tuberculosis were distributed. During the week the Indianapolis News printed two editorials upon the subject of preventing tuberculosis and gave daily illustrated accounts of the exhibit. Other papers gave good descriptions and abstracts of the addresses.

Through the influence of Mayor Bookwalter, whose heart and actions are in all good works, the City Hall was secured without rent. The forces of the city and the State Boards of Health unpacked and displayed the exhibit, a work which engaged ten men for twenty hours. The printing was given without charge by two large printing concerns, and the expenses—freight, hauling frames, burlap, expenses of speakers, etc., amounting in all to \$225—were paid from subscribed funds.

The pathological exhibit from the Medical College of Indiana, the medical department of Purdue University, attracted wide attention.

As part of the Secretary's report there is given herewith reports of the bacteriologist and chemist.

REPORT OF THE CHEMICAL LABORATORY FOR THE FIRST-CALENDAR QUARTER OF 1906.

By H. E. Barnard.

I herewith submit a report of the work of the Chemical Department of the Laboratory of Hygiene since its establishment to date, together with an outline of proposed work for the coming summer and recommendations for desirable and necessary legislation.

Owing to the time spent in equipping the laboratory regular work was not begun until October, when inspectors were sent out and analytical investigations commenced. The laboratory has, therefore, been in active operation for six months. During that time we have analyzed 1,984 samples of food products and 541 of drugs. Of these analyses 2,177 have been reported in full in the November and January bulletins and need no further mention. In the last month we have examined 56 samples of molasses, 31 samples of honey, 40 miscellaneous food samples, 221 samples of drugs, such as sodium phosphate, sulphur, beeswax, etc. Of these unreported food samples 65 per cent. have been pure and 35 per cent. adulterated, and of the drug samples 38 per cent. have been pure and 62 per cent. adulterated. In passing I may observe that all the sulphur samples were adulterated, and that most of the beeswax was paraffin. So that to date the analytical work on foods and drugs has given us the following results:

Total number of samples examined	2,398
Total number of samples pure	995
Total number of samples adulterated	
Percentage of adulteration	59.47

Much of our time has also been devoted to the sanitary analyses of waters, usually sent in by members of boards of health and health officers. We have examined 272 samples of water and have found 125 supplies polluted and unfit for drinking or domestic purposes. It is evident that the shallow dug well, supplied by surface water, is a menace to the health of the individual and the community. Of 113 shallow well waters analyzed 85, or 75.3 per cent., have been polluted by sewage. Many supplies were actually dangerous. Many others were evidently liable at any time to pass out of the safe class and become foci for the spread of water borne diseases. The driven or deep wells are a much safer source of supply. Our results show that 43.4 per cent. of the wells examined have been contaminated, but the large percentage of polluted supplies is in a great measure due to the fact that well owners call all bored or driven wells deep wells, when the results of our analyses indicate that they really should be classed as shallow or surface water wells.

The salary list of the laboratory for the last six months approximates \$2,100. The normal running expenses are not over \$100 a month. If, by reason of abnormally heavy expenses during the month of October incident to the collecting of 4,000 samples of food products, we set the total expense of the laboratory since it was opened for work at \$3,000, \frac{1}{2} of which has been used in the water laboratory, we find that the cost of collection and analysis of each food sample has been 80.6 cents and of each water sample \$3.68. If on the other hand we credit the laboratory with the regular fees for the analytical work done, the fees paid the chemists of the Ohio Food Commission for example, it appears that the laboratory has earned:

In 301 milk analyses at \$2 per sample	\$ 602
In 2,097 food and drug analyses at \$5	10,485
In 272 sanitary water analyses at \$10	2,720
A total of	13,807

A practical saving to the State over the cost of operation of \$10,807.

Outline of Proposed Work.—We have still on hand about two hundred samples of food products collected last fall. These samples will be analyzed and the results reported in an early bulletin. We have on hand several hundred samples of drugs, chiefly tinctures, which are now in process of analysis. We also have before us the examinations of more than 200 samples of patent and proprietary medicine, such as blood remedies, catarrh and cough cures, tollet preparations, etc.

This work will soon be completed, and it will then be necessary to collect other samples. The present laboratory force can not afford to leave their analytical work to act as inspectors for more than brief periods, and it will be advisable that a deputy food and drug inspector be employed throughout the summer months. One of the most important branches of food inspection is that of dairy products. And beginning with the month of May we should endeavor to secure from cities and towns samples of milk for analysis. We shall have to rely upon local aid for making the collections, and we have already received assurances of assistance from several health officers. Unfortunately there is no adequate law now on the statutes by which we can punish the sellers of illegal milk, and we shall be forced to conduct prosecutions in local courts under local ordinances.

Many analyses of butters have shown that much oleomargarine is being sold as butter throughout the State, and investigation shows that no attention is paid by restaurant keepers and dealers to displaying the signs "Oleomargarine used or sold here." I find that there is on the statutes a law passed in 1882 which is amply sufficient to control the situation if it can be applied. There is some question as to its present legality, however, and I suggest that it be tested in court, that if necessary it may be amended so as to be operative.

I think it advisable to make a special study of the quality of the soft drinks so largely consumed in the summer months. Their composition is at least uncertain, and I believe in many cases of positive injury to the consumer.

The condition of the public and private water supplies is deplorable. While it may never be possible to eradicate completely the filthy disease producing family wells so situated as to be a cesspool for effluents from the barnyard and sink drains and privy, careful systematic inspection of public supplies is possible, and should be made in the future for the purpose of finding out the condition of the water systems. I have collected from every large town and city statistics of their public water supply, giving source, system of operation, per capita consumption and number of persons supplied. During the summer we should analyze as many of the public supplies as possible and arrange to make systematic inspections several times each year. For the isolated farmhouse well a chemical analysis is usually quite sufficient to determine the quality of the supply, but in order to arrive at a correct valuation of the purity of a public system operated perhaps under changing conditions both the chemical and the bacteriological analyses must be made.

'It must be remembered that as the work of the laboratory becomes known throughout the State an increasing number of miscellaneous samples of foods, drugs and water is constantly coming in for analysis, and therefore due consideration must be given this routine work, which, while perhaps not of special importance to the public at large, is frequently of great value in impressing the worth of the laboratory upon individual citizens whose support we desire.

Suggestions for New Legislation.—The present pure food law, while admirable in its general plan, is wholly useless as a means of bringing violators of the provisions of the law to justice. This is due to the fact that the penalty clause of the law was evidently "written in" by interests opposed to the bill, so that at present offenders must "knowingly sell" "articles injurious to health," thus making it necessary for the board to prove not only knowledge on the part of the seller but also the injurious composition of the goods. The bill should be simply amended so that the penalty clause will read in effect:

"All persons violating the provisions of this act shall be for the first offense subject to a fine of \$10 and costs; for the second offense subject to a fine of \$50 and costs; for the third offense subject to a fine of \$100 and costs, and three months in iail."

A specific milk law is absolutely necessary. Last fall I endeavored in two cases to secure conviction of persons guilty of selling preserved and watered milk. At Jeffersonville the grand jury refused to indict because it was so evident the offenders could not be convicted under the law, and at Terre Haute the justice of the peace before whom a case of watering was brought released the offenders because it was impossible to prove the vendor knew the milk to be adulterated. The loss of these two cases, one tried under the general food law and the other under the specific milk law, proved how futile it was to attempt to convict an offender under the present food statutes.

At the present time the supervision of the State Board of Health over public water supplies is limited and productive of small results. With a water laboratory at its disposal the board should be given control of all public supplies. If a law which has been in successful operation in Massachusetts for some years could be enacted, giving the supervision

of all public waters to the board, with authority to grant improvements and extensions after due examination of the conditions, not only would the quality of the present supplies be improved but waste of money and endangered health would be prevented.

The disposal of sewage, household and manufacturing wastes is also a problem capable of being efficiently attacked by means of the laboratory, and prompt measures are necessary if we are to conserve the purity of the streams and ponds which are the natural source of water supply.

While I realize the limitations placed upon the board in the matter of increasing the salary of the chemist, because the amount to be paid is fixed by statutes, yet I venture to suggest to you for your consideration the following facts:

First—\$1,500 per year is wholly inadequate compensation for the services required of your chemist.

Second—He is in charge of two laboratories, food and water, as either department is sufficient to command his undivided attention. The Board of Health of Massachusetts employs two chemists as heads of their food and water laboratories, paying each of them \$2,800 per year.

Third—He accepted this position with your board with full knowledge of present conditions, yet to do so refused a position as head of the government import laboratories at \$2,000 per year, for he received the assurance of your secretary that he would strive to have the salary increased at the earliest opportunity, and had faith that the board would be able to secure the necessary legislation.

The work required of the Laboratory of Hyglene is bound to increase rapidly as its availability and value become known, and the expense of operation will thereby become greater. As already suggested, food inspectors are necessary. A food law without inspectors to see that it is enforced is bound to become crippled and to lose its value. While I do not believe in a corps of deputies, I do think that we should have at least one competent man on the road all the time and the funds available for another if he is needed. We also must have funds to conduct prosecutions, for we can not always rely on local prosecutors to convict offenders. It is evident that more money is needed for the successful operation of the laboratory if it is to attain to its fullest usefulness, and I beg to suggest that an increased appropriation of \$5,000 be asked of the incoming legislature.

REPORT OF THE BACTERIOLOGICAL LABORATORY FOR THE FIRST CALENDAR QUARTER OF 1906.

By T. Victor Keene.

The Bacteriological Laboratory was put into commission January 1, 1906, although much work had been done previous to the formal opening of the laboratory. Since the laboratory has been opened a great deal of our time and energy has been spent in devising a systematic method of keeping a record of the work done, as well as devising methods of technique.

Method of Keeping Records.—It was early seen that it would be necessary to devise some method of keeping the records so that they could be readily referred to. All the records are now kept as follows: We have one card containing a full history of the case. This history card gives the clinical history of the case and the record of when the specimen was sent to the laboratory, when it was received, when the report was mailed, and of course the results of the finding. This one card contains full information regarding the case. These cards are kept in consecutive order, each card being given a number. It is very obvious that the persons most liable to refer to this record are the physician in the case and the patient, so we have a cross-index system containing the name of the patient, the nature of the specimen, result of the examination and the file number of the card giving the complete history. This file by patients is kept alphabetically. Each physician of the State who submits for examination a specimen of any variety is given a separate card in our index file of physicians, and on this card we have a record of the date on which we made the examination for him for typhoid fever. diphtheria or tuberculosis. This card also refers back to the card containing the complete history of the case. The index to the physicians and patients is alphabetically arranged.

As a further aid in completing our cross-index we have a set of cards giving the name of both the physician and the patient, arranged by counties, so that at any time we can refer to any individual county and in a few seconds know just how much work and what variety of work the laboratory has done for any particular section of the State. This method of keeping the records is an original one. The idea of course is the card system in common use in many lines of business. These records are referred to much oftener than would be supposed. We have on a few occasions had physicians complain that reports had not been sent to them. Reference to the record shows at once the exact date the report was made. We have on two occasions had physicians allege that examinations made in our laboratory gave certain findings, while examinations made by other physicians gave entirely different findings. Referring to our record we are able at a glance to tell just exactly what our findings had been, and in both cases they were exactly similar to the findings reported by other physicians.

Letter to Medical Societies .-- It has been very obvious for some time that the physicians throughout the State at large did not know about the laboratory. While the health officers of the State have been informed regarding the same, it seemed to us that they had failed to inform the physicians of their respective communities regarding the laboratory, as it was an almost daily occurrence for physicians from various parts of the State visiting Indianapolis to drop into the laboratory and express great surprise at the existence of the same. Various means of acquainting the profession of the existence of the laboratory, its scope of work, etc., were discussed, and it was finally decided to address a letter to the secretary of every medical society of the State apprising them of the fact that the laboratory was now ready to receive specimens and advising them how to ship the same, etc. We further asked the secretary to bring up the matter before the society and extend to the society an invitation to submit specimens to the laboratory. We have received answers from nearly half of the letters sent out, and nearly all the answers received seemed to show

that the writer had not been aware of the existence of this laboratory. However, this work will reach only a small percentage of the physicians in the State, and I would respectfully recommend that the board authorize the issuing and sending out of a letter to every physician of the State apprising him of the existence of the laboratory and inviting him to send in specimens. The cost of such a letter need not be great. I feel certain that the expenditure would be justified, and that it will greatly increase the amount of service we would render the public.

Organization of Laboratory Proper.—There are a great many solutions, reagents, stains and varieties of culture media which have to be made up in the laboratory. We have practically spent the greater part of the time since the first of the year in getting our laboratory stocked with these things.

We have on hand at this time twelve liters of Ziehl Neilson's Carbolfuschin, eight litres of Gabbet's Sulphuric Acid decolorizing solution. three litres of Loeffier's Methyline Blue Solution, one litre of Wright's Blood Stain; six litres of Delafield's Haemotoxylin Solution, one litre of Eosin, and numerous other stains in smaller quantities. These stains, which we have made up in such large quantities, are stains which improve as they become older, and it is always a matter of great convenience to a laboratory to have old stains to use, as they are much more reliable and certain in their results. We have the stains made up to do practically any variety of bacteriological and pathological work, although, of course, we do not have the stains made which deteriorate when in solution. In addition to the stains we have made up and ready for immediate use the various hardening and fixing solutions used for the preserving of tissues, including the Kaiserling solution for the preservation of gross pathological specimens. We are from time to time, as opportunity offers, adding or collecting interesting pathological specimens, and while we may not be able to make much of a show at this year's meeting of the Indiana State Medical Society, it is our ambition to each year have an interesting exhibit before the State Medical Society from the Laboratory of Hygiene of the State Board.

We have made up a large variety of culture media, including the various sugar broths, gelatines and agars. While we fully realize that for the time being at least research work in the laboratory must be made secondary to the routine work, we have, however, been doing such as our time would allow. Practically all the research work we have done has been along the lines of culture media.

Diphtheria Serum.—The manufacture of blood serum for diphtheria diagnosis is a difficult proposition, as the media dries up rapidly and tends to become contaminated very easily. Within the last few months Wesbrook, superintendent of the Laboratory of Hygiene of the Minnesota Board of Health, published a paper advocating the use of a small amount of glycerine in the blood serum, claiming for it that such serum did not dry out so rapidly, and that the presence of the glycerine would prevent the growth of certain varieties of bacteria. This was in keeping with a well-known fact that vaccine virus if marketed in glycerine did not tend to become contaminated, as the glycerine was sufficiently antiseptic to destroy large numbers of bacteria. Wesbrook further claimed that the

diphtheria bacillus was not affected by glycerine, but grew readily. It is very obvious that if his claims were warranted the glycerine serum would be much better than serum without it, so we have been experimenting with blood serum with various percentages of glycerine in it, and have found that blood serum containing 5 per cent. glycerine makes an admirable culture media for diphtheria bacilli. We expect to use this glycerine serum instead of the plain serum hereafter, as it is superior to plain serum.

Typhoid Fever.—Conrade, in the Deut. Med. Woch., January 11, 1906, published a paper on the result of some observations he had been making on the early isolation of typhoid bacteria from the blood of typhoid patients. It is a well-known fact that in practically all cases of typhoid fever by the time the individual sickens with the disease the typhoid bacteria are in the blood. It is further well known that there are several features which make its isolation very difficult, the most prominent of which is the fact that shed blood is about ten times as germicidal as blood in the blood vessels, due to the coagulation of the blood and the breaking down of the white blood cells into nuclenic acid. Conrade's work was as follows: He drew blood from patients into a sterile pipette, in which was a small amount of a 5 per cent. solution of ox bile, the object of the ox bile being to prevent coagulation of the blood. was then put in a culture media in a broth of special formula, and the typhoid bacteria grew readily in most cases. It at once occurred to us that this could be utilized in a practical way in a public health laboratory. and we are at present working on the following hypothesis:

We know absolutely that we can get typhoid bacteria from the blood the first or second day. We know further that it is only a matter of a few hours before they have grown in sufficient numbers in the tube that we can see the actively motile bacteria under the microscope. The identity of the typhoid bacteria can be established by discovering a motile organism present, and subjecting this motile organism to the action of a typhoid bacteria it will agglutinate; if it is not the typhoid organism it will not agglutinate, so the plan we have in mind for utilizing these observations in this laboratory was as follows:

We would put out an outfit composed of a small sterile pipette, sealed at both ends and having in its bulb some of the ox bile solution. The physician would be instructed to break off both ends of the pipette, which would of course allow the bile solution to flow out, but a sufficient amount would adhere to the walls to prevent the blood from coagulating. He would then draw his blood under aseptic precautions and inoculate a tube of media of the variety needed. This he would ship to us and we would incubate it, and at the end of twelve hours examine the culture to determine whether or not there were any motile organisms present. If there were any motile organisms present we would test the organism with a known typhoid serum, and if the same agglutinated we would be certain that the organism was a typhoid organism. The difficulty in the way of making the test lies in the fact that the postal regulations do not allow the shipping of liquid media, so it is necessary to devise some variety of solid media which would work. We have spent a great deal of time working with various modifications of gelatine and agar, all of

which we have found unsatisfactory. We are at this time working on a culture media the solid part of which will be composed of a low melting paraffin, the idea being that this being a solid media it will conform with the requirements of the government in regard to shipping, but being a low melting paraffin it will at once become a fluid media when put into the incubator. The practical advantage of this work, if after experimentation it is found to be as practical as it seems to be in theory, we will be able to arrive at a diagnosis of typhoid fever at the very beginning of the disease, as early as the first or second day; whereas with the Widal Reaction, which we at present use, and which is in common use in public health laboratories, we are only able to arrive at a diagnosis not earlier than the fifth day, and usually about the seventh or eighth day.

Below is subtended a statistical table of the amount of work done in the laboratory since the first of the year per county:

TUBERCULOSIS.

County.	No.	County.	No.
Adams	3	Kosciusko	5
Allen	3	Lagrange	6
Bartholomew	3	Laporte	13
Benton	6	Madison	12
Blackford	5	Marion	76
Boone	3	Martin	1
Carroll	3	Miami	5
Cass	1	Montgomery	6
Clay	4	Morgan	2
Clinton	15	Noble	5
Crawford	5	Owen	2
Daviess	3	Parke	7
Decatur	8	Perry	4
Dekalb	1	Pike	1
Delaware	3	Posey	12
Elkhart	6	Putnam	1
Fayette	1	Randolph	1
Fountain	9	Ripley	6
Franklin	3	Rush	3
Grant	4	Shelby	2
Hamilton	11	Spencer	1
Hancock	7	St. Joseph	2
Harrison	1	Sullivan	4
Hendricks	15	Tippecanoe	3
Henry	14	Tipton	4
Howard	2	Union	5
Huntington	5	Vermillion	6
Jackson	2	Vigo	7
Jay	2	Wabash	3
Jefferson	4	Wayne	27
Jennings	1	Wells	5
Johnson		Whitley	2
Knox	11	White	2

DIPHTHERIA.

County.	No.	County.	No.
Allen	. 9	Marion	. 14
Blackford	. 1	Marshall	. 2
Carroll	. 1	Montgomery	. 1
Franklin	. 1	Rush	. 3
Hamilton	. 4	Spencer	. 1
Hendricks	. 3	Tippecanoe	. 1
Huntington	. 1	Tipton	. 1
Jasper	. 4	Vermillion	. 2
Jefferson	. 4	Vigo	. 1
Laporte	. 6	Wabash	. 1
Madison	. 1	Wayne	. 6

TYPHOID.

County.	No.	County.	No.
Clinton	. 3	Laporte	. 5
Elkhart	. 1	Marion	. 9
Fountain	. 3	Posey	. 1
Hamilton	. 1	Vigo	. 9
Jennings	. 1	Wayne	. 16

The following circular letter from Surgeon-General Wyman was presented for action:

March 15, 1906.

J. N. Hurty, M. D., Phar. D., Secretary State Board of Health, Indianapolis, Ind.;

Sir—In accordance with the provisions of section 7, act of Congress approved July 1, 1902, I have to inform you that the Fourth Annual Conference of State and Territorial Boards of Health with the Public Health and Marine Hospital Service will be held at the New Willard Hotel, Washington, D. C., on Wednesday, May 23, 1906, at 10 o'clock a. m.

Your board will be entitled to representation in the said conference by one delegate. It is requested that your board will submit a typewritten report of any State or municipal health legislation enacted during the past year in relation to public health, sanitation or kindred subjects. This report will be for publication in the transactions and will not be read at the meeting.

A program of the subjects to be discussed will be announced in a subsequent communication.

I would request that I be informed in advance of the name of the delegate who will represent your Board.

Respectfully,

WALTER WYMAN,

Surgeon-General.

J. W. K.

After consideration it was ordered that the Secretary should be the delegate to represent the Board at the said Conference.

Ordered, That an annual health officers' school be held each year the last Thursday and Friday of June, and the Secretary to prepare programs.

Ordered, That Drs. Tucker and McCoy represent the Board as delegates to the annual meeting of the National Association for the Study and Prevention of Tuberculosis, which would be held May 17th, 18th and 19th in Washington, D. C.

Ordered, That copies of the following circular be sent to the presidents of all county medical societies:

CIRCULAR.

Dear Doctor—It will be appreciated if you will call the attention of your Society to the fact that the Bacteriological Department of the Laboratory of Hygiene, of the State Board of Health, is in good working order and ready to receive specimens for examination. We have already received a great many specimens for examination from various parts of the State, but we have not received as many from your locality as we expected to receive.

There is enclosed herewith a circular of directions as to the manner of shipping specimens. We are permitted by law to undertake only such work as is related to public health, and to this end we examine sputa submitted for examination for tubercle bacilli; samples of blood from suspected typhold fever patients for the Widal Reaction, and cultures made from sore throats, suspected to be cases of diphtheria.

We are prepared also to undertake practically any laboratory examination that might be desired by the physician, provided, of course, the same is a matter of public health administration. We will examine urine for tubercle bacilli, although we do not make a chemical examination of urine nor examine for any other elements than tubercle bacilli. We will mail to any physician, requesting the same, a full set of outfits for the collection and shipping of specimens intended for examination to the laboratory. We shall be glad to send you an equipment of the same, should you desire it.

We hope to make the Laboratory a power for good in the State, and are desirous that the physicians of your Society and section of the State become as interested and use the Laboratory as freely as the physicians of other sections of the State have already done.

SPECIAL MEETING.

May 18, 1906.

Special meeting called to consider the sanitary surveys of certain schoolhouses and to take proper action.

Called to order by the President at 2 p. m.

Present: Drs. Davis, Wishard, Tucker and Hurty.

Sanitary surveys of the schoolhouses at West Newton and Valley Mills read as follows:

SANITARY SURVEY OF SCHOOLHOUSE AT WEST NEWTON, DE-CATUR TOWNSHIP, MARION COUNTY.

By J. N. Hurty.

In response to an invitation of the Trustee, Mr. J. D. Sanders, and several patrons of the school, the State Health Officer made an inspection of the schoolhouse at West Newton, April 23, 1906. This schoolhouse is known as West Newton School No. 3.

Site.—The site comprises about two acres. It is high and rolling and well drained. It is in every way satisfactory.

The Building.—The building is frame, built in 1876. There are three rooms above and three below; no basement; narrow box winding stairway, heated by Ideal Heaters, which are not satisfactory. There are two fire escapes on the building. The foundation is brick and somewhat washed by water, but not dangerous, nor could it be termed bad. The steps are in bad repair; the floors are worn and very poor, yet the building can not be said to be dilapidated.

First Floor.—The building is entered by a vestibule facing the west. From the vestibule a narrow winding stairway leads to the upper story. Two doors open from the vestibule, one into the primary room and one into the room for the Sixth and Seventh Grades.

Primary Room.—It is 24x5 v12, total 8,640 cubic feet, furnishing space for forty children. There are 41 seats; enrollment 41, average daily attendance 32. The light is admitted from three sides and the teacher is compelled to look into the light. Considerable space in this room is occupied by the Ideal Heater. Blackboards glossy and teachers complain of this.

Sixth and Seventh Grade Rooms.—This room is 24x30x12, total 8,640 cubic feet. Enrollment 26; average attendance 22. Floors worn, glossy blackboards. Much space in this room is occupied by the large Ideal Heater. It is lighted from three sides and the teacher is compelled to look into the light.

Third, Fourth and Fifth Grade Rooms.—This room was built on to the main building some time after first construction. It is entered by a vestibule built inside the room. The said vestibule is used as a cloak room. The room is 30x30x12, which is 9,600 cubic feet, supplying space for 48 pupils. There are 50 seats, enrollment 46, average attendance 40. Glossy blackboards, floors worn, considerable space occupied by the large Ideal Heater. The light is admitted from three sides, and the teacher is compelled to look into the light.

Second Floor.—Second floor is reached by a winding narrow box stairway, which opens into a vestibule. Vestibule is lighted by two windows and is used for a cloak room. One room opens into a narrow

hall, which has been created by building a partition through a room which is immediately above the primary room. The room partitioned off as described is used for a laboratory, is lighted from three sides, floors are worn, blackboards glossy, and is heated by the Ideal Heater in the room below.

Eighth Grade Room.—This is the high school room and it is 30x30x12, which makes 9,600 cubic feet, space for 48 pupils; enrollment 52, and average daily attendance not given. The room is lighted from three sides. Glossy blackboards, floors worn, heated by the heater in the room below. Teacher faces light.

Third and Fourth Grade Room.—This room is the second story of the addition which has before been described. It is 30x30x12, making 9,600 cubic feet, furnishing room for 48 pupils. It contains 50 seats; glossy blackboards; lighted from three sides; the floors are worn. The teacher is compelled to look into the light. Warmed by the Ideal Heater in the room below.

Remarks.—Whooping cough prevailed in the school towards spring, but no epidemic diseases. Coughs, colds and catarrhs prevalent every winter.

Opinion and Recommendations.—It is very plain that this schoolhouse is not sanitary. On account of defective lighting the eyes of both teachers and pupils are being injured, and on account of defective heating and ventilation their general health is being injured. It is very apparent that the building can not be repaired so as to make it sanitary, and I therefore recommend its condemnation.

After consideration of the above survey, and after hearing arguments from patrons for and against condemnation, which arguments were duly considered, the following order of condemnation was unanimously passed:

PROCLAMATION OF CONDEMNATION OF THE SCHOOLHOUSE AT WEST NEWTON, MARION COUNTY, INDIANA.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse at West Newton, Decatur Township, Marion County, Indiana. is unsanitary and untit for school purposes; it is therefore

Ordered, That said schoolhouse is condemned and shall not be used for school purposes from this date, May 18, 1906, forward. And in the event of the trustee or any school teacher or any person violating this order of condemnation, then the Secretary of the State Board of Health shall duly inform the Attorney-General, who will bring prosecution as in the statutes provided.

REPORT OF SANITARY SURVEY OF VALLEY MILLS SCHOOL-HOUSE, MARION COUNTY, MAY 14.

Site.—The site is excellent in every way. It is high ground and surrounded with few trees.

Building.—The building is an old frame with a much worn foundation, holes are torn or broken in, and there are cracks in the foundation in several places. The building is one story. The plaster is off in places and there are cracks in the ceiling and walls.

Eighth Grade Room.—This room is 24x32x14 feet, making the cubic contents 10,752 feet. This supplies space sufficient for 51 pupils. The enrollment is ——, and the attendance is ——. The light is introduced from two sides. On the west side there are four windows and on the south there are two windows. The teacher is compelled to look into the light. Each window has eight glass lights, 12x18 inches, making the total glass area for the whole room of 72 square feet. The required amount would be 128 square feet. The room is therefore not properly lighted. The blackboards are glossy and chipped in places. The room is heated by a stove and there are no ventilating shafts.

Primary Room.—This room is 24x24x14, making in all 6,064 cubic feet, furnishing space for 30 pupils. The enrollment is —, the attendance is —. The arrangement is such as to compel the teacher to look into the light. The room is heated by a stove. There are no ventilating shafts. The floor is bad.

Outhouses.—These are well separated and are in passable condition. Water Supply.—The water is carried from a well at a farmhouse, about one-eighth of a mile distant. The well at the schoolhouse furnishes water which is impure and is not liked by the children.

Opinion and Recommendations.—It is my opinion that this school-house is unsanitary in every particular and unfit for school purposes. I recommend that the same be condemned.

Ater consideration of the above survey, and after hearing arguments from patrons for and against condemnation, which arguments were duly considered, the following order of condemnation was unanimously adopted.

PROCLAMATION OF CONDEMNATION OF THE SCHOOLHOUSE AT VALLEY MILLS, DECATUR TOWNSHIP, MARION COUNTY, INDIANA.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse at Valley Mills, Decatur Township. Marlon County, Indiana, is unsanitary and unfit for school purposes; therefore it is

Ordered, That said schoolhouse is condemned for school purposes and shall not be used for said purposes from and after this date, May 18, 1906, and in the event of the trustee or any school teacher or other person using the said schoolhouse for school purposes, then the Secretary of the Indiana State Board of Health shall duly inform the Attorney-General, who will bring prosecution as in the statutes provided.

Passed by the Indiana State Board of Health in special session, May 18, 1906.

Documents concerning the schoolhouse at Monument City, Polk Township, Huntington County, were read as follows:

MONUMENT CITY, HUNTINGTON COUNTY.

Monument City, Ind., 1906.

To the State Board of Health:

We, the undersigned, residents and patrons of School District No. 7. in Polk Township, Huntington County, Indiana, respectfully request that you make an examination of the school building in said district as to its fitness for school purposes, and that you make known its condition to the Trustee of said Township.

Geo. C. King, John Ammerman, Mathias Chrisman, Homer Dillin, David M. Prilaman, Joseph Forest, S. J. Ellis, John A. Ellis, Seth Davis, S. J. Fair, Monroe Bailey. Stephen Weeks, J. F. Vickery, C. E. Hefner.

REPORT OF SANITARY SURVEY OF SCHOOLHOUSE AT MONU-MENT CITY, HUNTINGTON COUNTY, POLK TOWNSHIP.

Survey Made May 10, 1906, by J. N. Hurty, Secretary.

Site.—The schoolyard covers about one acre and is well situated. The ground is high, gravel is found a short distance beneath the surface and the natural drainage is excellent; so good, indeed, as not to require tiling.

Building.—The building is brick with a stone foundation; no basement, two stories, two rooms, built about twenty-five years ago. The walls are sound; no cracks. The entrance is by one front door, which opens into a small vestibule lighted by one window. No provision for warming vestibule.

Primary Room.—The primary room is on the first floor and is entered through a door from the vestibule. It is 36x24x12 feet, which makes 9,504 cubic feet, furnishing space for 47 pupils. The room contains 52 desks, enrollment 43, average attendance 40. The desks are of the old wooden variety, yet are of good condition. Wraps are hung on hooks which are attached to the east wall of the room. The floor is in bad repair. Light enters by six windows, three on each side. Each window contains eight panes of glass, 12x18 inches. This does not furnish enough light, for the total number of square feet amounts to 72, and if the rule of one-sixth of floor area should be in glass is followed there should be 192 square feet. In other words, there is not quite one-half as much light as sanitary science demands. The blackboards are slate and the room is warmed by a stove. There are no ventilating shafts.

High School.—The high school room is on the second floor and is reached by a narrow stairway of twenty steps, in which there is one turn. This stairway is not of the variety known as "box stairway," but is, nevertheless, such in a general way, because it is so narrow and so confined in a small vestibule. If this schoolhouse were ever to catch on fire there would certainly be a pile of corpses to count in and upon the

stairway. This schoolroom is 36x22x10, making 7,920 cubic feet, which space is sufficient for 39 pupils. There are 40 seats, enrollment is 29, and average attendance 27. Floors are worn; no ventilating shafts; blackboards are slate. The room is lighted by six windows, three on each side. Each window pane is 12x18 inches, eight in each window, making 72 square feet of lighting surface. The sanitary requirements for lighting surface for this room would be 192 square feet. The room is heated by a stove.

The Water.—The water is supplied from a drilled well, which the trustee said was 110 feet deep. From this it is fair to presume the water is potable.

Outhouses.—The two outhouses are ordinary frame and are widely separated.

Sickness.—The testimony was to the effect that no epidemics had prevailed among the school children within the last few years; but, as would be expected, coughs, colds, and acute catarrhs were all frequently reported.

Recommendations.—As the above report, measurements and all considerations show this schoolhouse to be unsanitary and not up to standards, I therefore recommend its condemnation.

After due consideration the following order of condemnation was unanimously adopted:

PROCLAMATION OF CONDEMNATION OF THE SCHOOLHOUSE AT MONUMENT CITY, POLK TOWNSHIP, HUNTINGTON COUNTY.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse at Monument City, Polk Township, Huntington County, Indiana, is unsanitary and unfit for school purposes: therefore, it is

Ordered. That said schoolhouse is condemned for school purposes and shall not be used for said purposes from and after this date, May 18, 1906. And in the event of the trustee or any school teacher or other person using the said schoolhouse for school purposes then the Secretary of the Indiana State Board of Health shall duly inform the Attorney-General, who will bring prosecution as in the statutes provided.

REPORT OF SANITARY SURVEY OF SCHOOLHOUSE AT ROCK CREEK CENTER, ROCK CREEK TOWNSHIP, HUNTINGTON COUNTY.

Survey Made May 10, 1906, by Trustee W. D. Cline.

Site.—The site is bad. It is low, wet and undrained, and can only be drained with difficulty.

Building.—The building is brick with stone foundation, built in 1800. It was originally a one-room building, but lately it had been made into two rooms by a rough board partition. The building is entered by a

vestibule provided with hooks for wraps. The vestibule is not warmed, and the schoolroom is warmed by stoves. There are large cracks at the angle formed by the ceiling and side walls. There is no basement.

Primary Room.—This room is 27x30x14 feet, making 11,340 cubic feet; this is only room for 56 pupils. There are 40 desks; enrollment —; attendance 27. The room is lighted by three windows on the west side and one on the north side. They are so situated as to admit light from the right side of the children. Each pane of glass is 8x22 inches, making 58 square feet. The floor area is 810 feet, and there should be one-sixth of this area in glass—this would require 135 square feet. The room, therefore, has only about one-half as much light as sanitary conditions require. The floor is in good condition. The desks are almost new and of several different sizes.

High School Room.—This room is 16x25x14, making 6,720 cubic feet, furnishing space for 34 pupils. There are 25 seats. The enrollment is —: attendance 20. The room is lighted by three windows, two on the east and one on the north; each window has twelve panes of glass, 12x22 inches, making in all 58 square feet of glass surface. The floor area is 264 square feet, and one-sixth of this, or 44 square feet of glass, is required. The lighting is therefore sufficient. The light falls from the left shoulder of the pupils. The blackboards are slate.

Opinion and Recommendations.—I am decided of the opinion that the site of this school building is damp and low and difficult to drain and should be condemned. The school building has no basement beneath, is damp, hard to heat by stoves, has no ventilating ducts, the lighting of one room is insufficient, the vestibule is not heated and is an unfit place for wraps. I recommend that this building be condemned for school purposes.

After due consideration of the above survey, the following order of condemnation was unanimously adopted:

PROCLAMATION OF CONDEMNATION OF THE SCHOOLHOUSE AT ROCK CREEK CENTER, ROCK CREEK TOWNSHIP, HUNTINGTON COUNTY.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse at Rock Creek Center, Rock Creek Township, Huntington County, Indiana, is unsanitary and unfit for school purposes; therefore it is

Ordered, That said schoolhouse is condemned for school purposes and shall not be used for said purposes from and after this date, May 18, 1906. And in the event of the trustee or any school teacher or other person using the said schoolhouse for school purposes, then the Secretary of the Indiana State Board of Health shall duly inform the Attorney-General, who will bring prosecution as in the statutes provided.

Passed by the Indiana State Board of Health in special session, May 18, 1906.

SANITARY SURVEY OF SCHOOLHOUSE AT KENNARD, GREENS-BORO TOWNSHIP, HENRY COUNTY.

By Deputy E. H. Brubaker.

New Castle, Ind., May 4, 1906.

The building is a frame structure, which was originally one-story, consisting of three rooms and a hallway, with no basement. Then some years later the second story was added, making six rooms in all. The building is located on a lot of ample size and is reasonably well drained, with gravel walks leading up to the building from the street. The building is in a bad state of repair. On windy days the building can be felt to vibrate under the influence of the wind. On one extremely windy day the teacher felt alarmed, fearing that the building would collapse under the force of the wind. In one place the weather boarding is off, exposing the framework, which is decayed.

The blackboards are all slate and in good state of repair. The plastering is cracked and in some places is off. The rooms are all lighted by narrow windows and the north room on the ground floor is very dark, especially on cloudy days.

The rooms are all heated by stoves and on moderately cold days it is impossible to get any of the rooms warm enough, sometimes the temperature of the rooms is not above 60 degrees all day. This is especially true on windy days.

I was informed that there were many cases of colds and coughs, sore throats and pneumonia and allied ailments among the pupils and teachers, attributed to the cold and illy ventilated condition of the rooms. Many of the days the teachers and pupils wear their heavy wraps during school hours.

The stairs leading to the second floor are steep and dangerous, rising 14 feet in the same distance, and are protected by no railing. They are 9 feet wide. In all of the rooms the floors are in bad repair, with holes in same with boards and pieces of tin nailed over them.

In the lower rooms the wraps and the dinner pails or baskets are hung in the schoolrooms. Upstairs they are kept in the hall.

The desks and other fixtures are only in a fair state of repair.

The only means of ventilation is by windows.

The enrollment during the past winter was as follows: Primary room, 35; second room, grades two and three, 38; third room, grades three and four, 38; fourth room, 38; fifth room, 38; high school, 28; making a total of 215 pupils. The enrollment will show an increase for next winter. I was not able to learn the average attendance for last winter.

A large number of the patrons are complaining and are dissatisfied with the building.

The girls' outhouse is 112 feet north of the west wing of the building and the boys' outhouse the same distance north of the east wing of the school building. The two being about 100 feet apart.

The schoolhouse is in a very unsanitary and unsafe condition, the latter being enough to condemn it. I would recommend the condemnation of the schoolhouse for school purposes.

After due consideration of the above survey, the following proclamation of condemnation was unanimously adopted:

PROCLAMATION OF CONDEMNATION OF THE SCHOOLHOUSE AT KENNARD, GREENSBORO TOWNSHIP, HENRY COUNTY.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse at Kennard, Greensboro Township, Henry County, Indiana, is unsanitary and unfit for school purposes; therefore it is

Ordered, That said schoolhouse is condemned for school purposes and shall not be used for such purposes from and after this date, May 18, 1906, and in the event of the trustee or any school teacher or other person using said schoolhouse for school purposes, then the Secretary of the Indiana State Board of Health shall inform the Attorney-General, who will bring prosecution as in the statutes provided.

Passed by the Indiana State Board of Health in special session, May 18, 1906.

REPORT OF SECOND SANITARY SURVEY OF SCHOOLHOUSE AT AVON, WASHINGTON TOWNSHIP, HENDRICKS COUNTY,

By J. N. Hurty.

E. E. Blair, Trustee.

In response to a petition from patrons, J. L. Anderson, Deputy State Health Officer, made a sanitary survey of the schoolhouse at Avon, February 1, 1906. Said survey was duly presented to the State Board of Health at a special meeting held March 7, 1906, and after due consideration of the evidence presented the schoolhouse was condemned.

Due notice of the complete proclamation of condemnation was duly posted on the schoolhouse and the trustee was formally notified by Dr. W. J. Hoadley, Health Officer of Hendricks County.

Now come Edward Mills, D. W. Carter, and C. D. Hollingsworth, composing the Advisory Board of Washington Township, Hendricks County, and present the following petition, which was received April 28. 1906:

"We, the undersigned citizens, taxpayers and patrons of School No. 6, in Washington Township, Hendricks County, State of Indiana, respectfully petition you to reconsider the action of your Honorable Board concerning the inspection of Schoolhouse No. 6, located at Avon, in said Washington Township, and for the purpose of reconsidering the matter we desire to call your attention to the following facts:

First. The building as it now stands was originally built as a twostory building and was not built as a one-story building and an additional story added thereto, as represented to you.

Second. The roof of said building is a good slate roof, and in good condition except in two places around flues.

Third. The floors of the various rooms are considerably worn, but these conditions could be remedied by reflooring. Fourth. If the plan for heating the house is not sufficient we believe that it could be made sufficient without much expense.

Fifth. While the plastering is cracked in a few places, it is only where the leaks above referred to have damaged it, and it could be repaired with little expense.

Sixth. The outer walls of said building are apparently in as good condition as they were when first constructed. Upon careful examination we are unable to find any serious defects or cracks in the outside walls and only one small crack in the partition wall between the two lower rooms.

Seventh. There has been some drainage constructed for the schoolhouse lot, and if it is not sufficiently drained it will be a very easy matter to put in whatever amount of ditching is necessary to drain the same.

Eighth. The schoolhouse as it now stands is centrally located, and a good barn and sheds have been erected on the schoolhouse lot to accommodate the scholars and patrons of the school. Said buildings may not be entirely modern, but the same is well ventilated and lighted and if its sanitary conditions can be improved we will appreciate any suggestions you desire to make.

Ninth. As persons interested in having the right thing done we believe that this schoolhouse building is sufficient to accommodate the demands of the district in the township in which it is located, and that it can be put in the proper condition at very little expense. We also believe that it will be an unnecessary and useless burden to the taxpayers of the township to have the building torn down and a new one constructed.

We, therefore, ask you to consider the above facts and we ask you to make a careful investigation as to the true situation in regard to the sufficiency of the present building for school purposes."

D. W. CARTER,
EDWARD MILLS,
C. D. HOLLINGSWORTH,
Advisory Board.

SECOND SANITARY SURVEY OF SCHOOLHOUSE.

Upon Monday, April 30, 1906, State Health Officer made a second sanitary survey of the said schoolhouse as follows:

Site.—The schoolyard is about two acres in extent. One-third is low wet ground. Trustee E. E. Blair, upon being questioned, said that in the winter of 1905 and 1906 fully one-third of the schoolyard was covered with water for a period of many days. At one time it was necessary to wade through water two inches deep, with mud beneath, to get coal from the coalhouse immediately in the rear of the schoolhouse yard.

Mr. J. Langston. Principal, upon being questioned, said that in rainy weather the schoolhouse was very damp; the walls at times being so moist that the blackboards could not be used. At these times the atmosphere in the room felt damp.

The trolley line runs within 42 feet of the front door and the noise of the passing cars is bound to be detrimental to the school, as attention to books and recitations will be disturbed and confusion caused.

The water supply is from a dug well which is 18 feet deep and which is immediately in the center of the trolley track. The top of the well has been covered over with brick and the water piped to a pump 12 feet away. This well may become polluted at any time through the dropping of excreta upon the track from passing trolley cars.

Conclusion.—The site is unsanitary and unfit in every particular for a schoolhouse.

Building.—The building is brick with a brick foundation. No basement, two stories high, four rooms, built in 1884. Cracks were discovered to exist on all sides of the building. The roof is slate and although not waterproof at the present time, could easily be made waterproof. The building is heated by two Peck-Williamson Ideal Heaters. These heaters are in the lower rooms and take up a great deal of space. According to the plan of these heaters they receive cold air from the outside and after warming introduce it into the lower and upper rooms.

There is also an appliance by which these heaters are designed to remove the foul air from near the floor of each room. According to the testimony received from the trustee, teachers and pupils these heaters are not adequate and do not maintain a uniform or proper temperature and do not properly pump the foul air away. At this point I will say that if the heaters were satisfactory they would be the first ones of the kind that I have ever known which were.

A winding stairway, 4 feet wide with 23 steps, leads to the upper story. The outer edge of the stairway is protected by a strong banister and the entrances to the two rooms in the upper story are through two small doors, one on each side of a narrow vestibule. This constitutes a firetrap, and if the house should catch on fire while school is in session many lives would doubtless be lost upon this steep, winding, narrow stairway. If the schoolhouse is remodeled the stairway must be so constructed as to lessen to the fullest degree possible the danger from accident by fire.

The total enrollment during the last term was 135, with a daily average attendance of 104. This makes an average absence of 31, or 22.9 per cent. Much of this absence was caused by sickness, for coughs, colds, catarrhs, headaches, and rheumatism prevailed among the children. The children are reported as continually complaining of cold feet in cold weather.

A marked unsanitary feature of the present building is the fact that the cold damp halls is the only place for keeping wraps.

Intermediate Room.—On the first floor, $30x21\frac{1}{2}x12$ feet, making 7,740 cubic feet in all. The room contains 38 seats, with 40 pupils enrolled, average daily attendance 26. The cubic space is sufficient. The floor is badly worn. Light falls over the right shoulders of the pupils. Blackboards are painted, but not glossy. Ceiling cracked in several places. Seats vary in size to fit pupils of different ages.

Primary Room.—On first floor, on west side, 30x21½x12, 7.740 cubic feet in all; 36 seats, 42 pupils enrolled, average daily attendance 32. There is an abundant cubic space for each pupil. Floor much worn. Blackboards painted, but not glossy. Ceiling much cracked. Seats vary in size to fit pupils of different ages.

Grammar Room.—This is the east room, in second story, 30x21½x14, making 9,030 cubic feet. The room contains 33 seats, 26 pupils enrolled, average attendance 24. There is ample cubic space for each pupil. The light falls over the right shoulders of the pupils. Blackboards painted; but not glossy. Ceiling is cracked. Floor much worn. Seats are proper size.

High School Room.—This is the west room in second story, $30x21\frac{1}{2}x14$, making 9,030 cubic feet in all; 25 seats, 27 pupils enrolled, average attendance 22. Floor badly worn. Cracked ceiling. Blackboards painted, but not glossy. Light falls over left shoulders of pupils.

History.—There were four teachers in this building last year. The Principal, Mr. J. Langston, says the schoolhouse is very unsanitary. He asserts that the heating and ventilating are far from what they should be and that the almost continued dampness is a cause of rheumatic pains. One lady teacher last term quit on account of bad health after three and one-half months service. She claimed the unsanitary conditions of the schoolhouse caused her illness. The teacher who took her place taught five weeks, for she claimed her health was being injured by the unsanitary surroundings, namely, continued dampness, uneven warming and poor ventilation.

Trustee Blair reports that none of the four teachers will accept a position for the next year, although the patrons of the school especially request that they be employed again. The refusal of the teachers to tach in this school building is announced by them to be because of the unsanitary surroundings.

Opinion and Recommendations.—I am very confident that the school-house at Avon is unsanitary. It is insufficiently ventilated and warmed, and in two of the rooms the light is introduced over the right shoulders of the pupils. It is also unsanitary because of its dampness and because of the cold damp halls where wraps are kept.

The water supply is not now polluted, but the well is in a dangerous situation, and may become polluted at any time, and this threatens a further unsanitary condition. The site has already been shown to be low and wet. It could be drained and filled at considerable expense.

I recommend that the former condemnation be not repealed and that it do stand. $\dot{}$

In order to put this schoolhouse in good sanitary condition the grounds must be well drained and filled: a basement must be placed under the entire building, with foundation walls built of stone or vitrified brick or other impervious material. The said basement must have a cemented floor and an efficient heating and ventilating system must be supplied. Cloakrooms properly warmed, lighted and ventilated, must be constructed. As for the enrollment for next year, according to the estimate of the trustee, it will be 160, and so it is plain that an addition must be built to the present schoolhouse if it is remodeled, for there is not a square foot of space for more pupils in the present structure.

After due consideration of the arguments of a paid attorney and of citizens of the township, which were all duly weighed and considered, the former condemnation of this schoolhouse was unanimously reaffirmed.

REPORT OF SANITARY SURVEY OF SCHOOLHOUSE AT KENT, REPUBLICAN TOWNSHIP, JEFFERSON COUNTY.

Made April 17, 1906:

In accordance with request of County Superintendent and several patrons of the school, I made an inspection of the schoolhouse at Kent, Jefferson County, Indiana.

Site.—The site is not a good one. It is not high and dry and yet can not be said to be wet. The schoolyard is too small and it is impossible to add more ground on account of the residence district adjoining.

Building.—The building is an old dilapidated two-story frame structure, stone foundation. The plastering has fallen off in many places and cracks are frequent. There is no basement. Both rooms are heated by stoves and there are no ventilating shafts. The windows are broken and in a ramshackle condition. On standing in the center of the room and jumping up and down the walls of the building would shake. One floor has been placed on top of another until now there are three floors in the room. The rooms are lighted by three windows on each side. The light admitted is not sufficient. Both rooms are overcrowded and complaints are frequent. The report of the teacher shows that colds, coughs, and rheumatism are frequent. There have been no reports of diphtheria or other infectious diseases. The per cent. of attendance during last term was 90.

Opinion and Recommendations.—My opinion is that this schoolhouse is unsanitary and unsafe for school purposes and I therefore recommend its absolute condemnation, and the condemnation of the present site.

After due consideration of the above survey the following order of condemnation was unanimously adopted:

PROCLAMATION OF CONDEMNATION OF THE SCHOOLHOUSE AT KENT, REPUBLICAN TOWNSHIP, JEFFERSON COUNTY.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse at Kent, Republican Township, Jefferson County, Indiana, is unsanitary and unfit for school purposes; therefore it is

Ordered, That said schoolhouse is condemned for school purposes and shall not be used for said purposes from and after this date, May 18, 1906, and in the event of the trustee or any school teacher or other person using said schoolhouse for school purposes, then the Secretary of the Indiana State Board of Health shall inform the Attorney-General, who will bring prosecution as in the statutes provided.

Passed by the Indiana State Board of Health in special session, May 18, 1906.

SANITARY SURVEYS OF SCHOOLHOUSES AT MADISON.

By J. N. Hurty.

UPPER SEMINARY.

Made April 18, 1906.

Site.—The site is a good one, but area is not quite sufficient.

Building.—The building is very old, having been built over sixty-five years ago. The front part of originally four rooms has been added to from time to time until now there are eight rooms, and their arrangement is such as to be a threat against life in case of fire or special alarm. The building is two stories, walls cracked and unsafe, no basement, worn floors, dangerous stairways, warmed by stoves, no ventilating shafts, not sufficiently or properly lighted. The facilities for the care of wraps are poor and unsanitary, and repulsive odors from the privies enter some of the rooms when windows are open. It is entirely unnecessary to make a detailed description of each room, for the whole building and every room is very unsanitary.

Recommendations.—I recommend that the schoolhouse be condemned for school purposes.

After due consideration of the above account of the Upper Seminary Schoolhouse at Madison the following order of condemnation was unanimously adopted:

PROCLAMATION OF CONDEMNATION OF A SCHOOLHOUSE AT MADISON, JEFFERSON COUNTY, KNOWN AS THE UPPER SEMINARY.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse at Madison, Indiana, known as the Upper Seminary, is unsanitary and unfit for school purposes; therefore it is

Ordered, That said schoolhouse is condemned for school purposes and shall not be used for said purposes from and after July 1, 1906, and in the event of any school officer, school superintendent, teacher or other person using said schoolhouse for school purposes, then the Secretary of the Indiana State Board of Health shall inform the Attorney-General, who will bring prosecution as in the statutes provided.

Passed by the Indiana State Board of Health in special session, May 18, 1906.

SANITARY SURVEY OF FULTON SCHOOLHOUSE AT MADISON.

Site.—The site is high, dry, naturally well drained, and good in all ways.

Building.—Brick, built in 1875. One story, two rooms. Insufficiently and improperly lighted, heated by stoves, no ventilating shafts. Entrance is through an unwarmed vestibule where wraps are kept.

Recommendations.—This is an old, damp and unsanitary building, and I recommend that it be condemned.

After consideration of the above sanitary survey the following order of condemnation was unanimously passed:

PROCLAMATION OF CONDEMNATION OF A SCHOOLHOUSE AT MADISON, KNOWN AS THE FULTON SCHOOLHOUSE.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse at Madison, Indiana, known as the Fulton schoolhouse, is unsanitary and unfit for school purposes; therefore it is

Ordered, That said schoolhouse is condemned for school purposes and shall not be used for said purposes after December 1, 1906, and in the event of any school officer, school superintendent, teacher or other person using said schoolhouse for school purposes, then the Secretary of the Indiana State Board of Health shall inform the Attorney-General, who will bring prosecution as in the statutes provided.

Passed by the Indiana State Board of Health in special session, May 18, 1906.

SANITARY SURVEY OF WALNUT STREET SCHOOLHOUSE AT MADISON.

Site.—The site is low and is liable to flood from Crooked Creek, near by. On one occasion the water was seven feet deep in the lower schoolroom and the washings from the privy floated around the schoolyard.

Building.—The building is stone, built in 1864. Two stories, two rooms. Insufficiently and improperly lighted by cross-lights. Building is damp at all times. Stairway to upper room narrow and of the kind known as box stairway, which is a great danger in case of fire or panic.

Recommendations.—I recommend that this school building be condemned for all school purposes.

After due consideration of the above survey the following order of condemnation was unanimously adopted:

PROCLAMATION OF CONDEMNATION OF A SCHOOLHOUSE AT MADISON, KNOWN AS THE WALNUT STREET SCHOOLHOUSE.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse at Madison, Indiana, known as the Walnut Street Schoolhouse, is unsanitary and unfit for school purposes; therefore it is

Ordered, That said schoolhouse is condemned for school purposes and shall not be used for said purposes after December 1, 1906, and in the event of any school officer, superintendent, teacher or other person using said schoolhouse for school purposes, then the Secretary of the Indiana State Board of Health shall inform the Attorney-General, who will bring prosecution as in the statutes provided.

Passed by the Indiana State Board of Health in special session, May 18, 1906.

HEALTH OFFICERS' SCHOOL.

Dear Doctor.—The Annual Health Officers' School will be held in Indianapolis Thursday, June 28-29. The headquarters will be at the new Claypool Hotel, and all sessions will be in the auditorium on the eighth floor.

A formal summons will be sent to you about ten days before the meeting. Preserve the summons, and also secure certificate of attendance when you come, from the clerk at the auditorium door. The two documents will give you a legal claim against your Board for your expenses. An interesting and instructive program will be prepared.

Any suggestions in regard to subjects to be considered and for the conduct of the conference will be thankfully received.

This conference is for all officers—county, city and town. Remember the date, June 28-29. Very truly yours,

J. N. HURTY,

Secretary.

By order of the State Board of Health.

REPORT OF THE INDIANA STATE BOARD OF HEALTH TO THE CONFERENCE OF STATE AND PROVINCIAL BOARDS OF HEALTH OF NORTH AMERICA WITH THE PUBLIC HEALTH AND MARINE HOSPITAL SERVICE, HELD MAY 23, 1906, WASHINGTON, D. C.

As the Legislature of the State of Indiana has not been in session since the last report of this Board, there are no new Health Laws and no changes to record.

The campaign against tuberculosis by the State Board has been actively carried on. Lectures upon this subject and the general subject of the preservation of the public health have been supplied to thirty-two teachers' institutes and farmers' institutes during the winter. Over 25,000 health circulars have been distributed. During the week beginning March 5 a tuberculosis exhibition was given in Indianapolis under the auspices of the Indianapolis Commercial Club and the Indiana State Board of Health. This exhibition was secured from the National Association for the Study and Prevention of Tuberculosis. It was held in Tomlinson Hall at Indianapolis. Lectures upon different phases of tuberculosis were given every night and every afternoon. The Governor and Lieutenant Governor of the State took active part in the work. Five thousand and one hundred and twenty-eight people visited the exhibition, and each visitor was supplied with a pamphlet treating of the prevention of tuberculosis.

During-the past year the State Board has condemned twenty-eight schoolhouses as unsanitary and unfit for school purposes, and twenty-five new school houses have been constructed and three remodeled. The Indiana law gives full power to the State Board of Health in this matter. The Legislature of 1903 gave to the State Board two laboratories, which together constitute a State Laboratory of Hygiene. The laboratory con-

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sists of two divisions—chemical and pathological. Each division has a skilled superintendent, with assistants. The work of the chemical division to date has been concerned mostly with making food and drug analyses, for the enforcement of the pure food and drug law. It has, however, made over 500 sanitary water analyses and has commenced the sanitary survey of White River. The bacteriological division is doing such work for the medical profession and the people generally as pertains to hygienic bacteriology and pathology. The Hygienic Laboratory has not yet finished its first year's work, but it is growing constantly, and numerous acknowledgments from citizens are received concerning its usefulness.

It is now seven years since the State Board, under a special law, has been collecting accurate mortality statistics. The statistics of births and cases of infectious diseases have not been heretofore a credit to the State, as the statutes did not permit of their accurate collection. An improvement, which is expected will be striven for by the Board, will be a law to be presented to the Legislature of 1907 which will make it possible to collect accurate birth and infectious disease records.

The Board takes pride in calling attention to the decreased death rate in 1905 as compared with the preceding five years. This decrease is 0.3. The figures show for 1905 a death rate of 14 per 1,000, and the average for the five preceding years was 14.3. This means a saving of over 700 lives. There also appears a decrease in the death rate by the same comparison in tuberculosis, typhoid fever, diphtheria, scarlet fever and pneumonia. There is a slight increase in cancer and in deaths from violence. Smallpox has been epidemic in many parts of the State, but has been mild, with very few mortalities. The total deaths from this disease for the year 1905 numbered 35. It is thought fair to conclude that at least some part of the reduction in the deaths from infectious diseases has been due to the activity of the State Health Department.

Approved and ordered forwarded as the report of the Board for the year ending May 1, 1906, to the Surgeon-General of the United States Public Health and Marine Hospital Service.

SPECIAL MEETING.

June 28, 1906.

Called to order at 12 m.

Present: Drs. Davis, McCoy, Wishard, Tucker and Hurty.

Dr. Davis stated the object of the special meeting was to consider the matter of causing the Health Officers of the State to inspect and report upon the condition of the slaughter-houses in their respective localities.

The object was thoroughly discussed, and the following order was adopted:

ORDER CONCERNING THE INSPECTION OF SLAUGHTER AND PACKING HOUSES.

The State Board of Health herewith directs that county, city and town health officers shall inspect all slaughter and packing houses within their respective jurisdictions and report their findings to the State Board. The facts of the said inspections shall be recorded upon the printed forms supplied by the Board, and all reports must be made and returned within ten days after receipt of this order and the said inspection forms. The Secretary is directed to prepare forms for the purpose set forth above and submit them to the President for his approval. When duly approved by the President the Secretary shall send said forms to all county, city and town Health Officers with a letter of instructions. The Secretary is also instructed to gather in all the reports possible, and tabulate and analyze them and report the matter at a further meeting of the Board.

The annual Health Officers' School opened the morning of the 28th, and the first session had adjourned at the hour of the meeting of the Board. Various features of the school were discussed, but no orders or resolutions were passed.

Adjourned to meet June 29, at 12 m.

ADJOURNED MEETING FROM JUNE 28.

June 29, 1906.

Called to order at 12 m.

Present: Drs. Davis, McCoy, Tucker and Hurty.

The Annual Health Officers' School adjourned at 12 m., and the meeting was to consider the work done and to allow all necessary bills. It was the general opinion that the most fruitful discussion related to the inspection of meat and of slaughter-houses, which discussion was led by Dr. A. W. Bitting, State Veterinarian. It was

Ordered, That the Secretary should prepare a full report of the school and publish the same in the Monthly Bulletin.

THIRD QUARTER.

REGULAR MEETING OF THE STATE BOARD OF HEALTH.

July 13, 1906.

AFFAIRS CONSIDERED OF THE SECOND CALENDAR QUARTER OF 1906, AND THE THIRD FISCAL QUARTER OF 1905-1906.

Called to order by President Davis at 2 p. m.

Present: Drs. Davis, McCoy, Wishard, Tucker, Hurty.

Minutes of last regular and the special meetings of May 18 and June 28 read and approved.

Report of the Secretary for the last quarter called for and read, as follows:

QUARTERLY REPORT OF THE SECRETARY.

The health of the State, as shown by reports to this Board, was generally better during the quarter ending June 30 than in the corresponding month last year. Smallpox still prevails to a slight degree, generally in mild form. There were no smallpox deaths during the quarter, the summary being as follows:

Cases decreased 31 per cent., deaths decreased 100 per cent., area invaded decreased 21 per cent.

The table presented herewith shows the data of the disease during the quarter. No marked epidemics are to be recorded. The work in the Laboratory of Hygiene has been going on as usual, and it is a pleasure to report that these departments are meeting with increased favor from the people and physicians of the State. The reports of the Bacteriologist and of the Chemist have been published each month in the Bulletin, and are here summarized for the quarter. Mortality statistics have been collected, tabulated and analyzed as usual; and the statistics pertaining to births, contagious diseases and marriages will be collected as soon as possible.

SMALLPOX FOR QUARTER ENDING JUNE 30, 1906.

	No. of Cases Reported.	Deaths.	No. of Counties Invaded.
April, 1905	151	4	18
April, 1906	97	0	11
May, 1905	125	2	11
May, 1906	112	0	14
June, 1905	114	4	13
June, 1906	58	0	- 8

Notices of the condemnation of the schoolhouses at Madison and Kent, Jefferson County; and of West Newton and Valley Mills, Marion County; of Rockcreek Township and Polk Township, Huntington County, were formally made out and sent to the officers having jurisdiction on May 26, 1906. Instructions to said officers being duly given.

VISITS AND INSPECTIONS.

May 22, Monroeville.—On account of inspection of schoolhouse and to confer with town authorities in regard to general sanitary matters. The report of this survey was presented at the special meeting held June 28, and action taken.

May 28, Zionsville.—On this date, in accordance with a request from the school trustees of Zionsville, I visited the place and made a sanitary survey of the schoolhouse. I was met by the three trustees and three or four other citizens, and the schoolhouse was thoroughly inspected. I deem it unnecessary to here give all the facts secured by the inspection, because the trustees immediately agreed that all changes and improvements recommended should be made before opening the school in the fall.

May 28. Shelbyville.—I visited this city upon request of the City Board of Health, who wished to have a consultation in regard to the sanitary affairs of their city. Upon arrival I was met by the members of the Board and, together with the Mayor, we held a consultation. The authorities named desired to draw up and have passed, if possible, a local ordinance controlling the meat supply and in regard to the removal of nuisances affecting the public health. The subject was discussed for fully two hours, and then we rode over the city inspecting various unsanitary conditions. I think my visit was productive of good, for ordinances governing the subjects named above have since been passed, and

are being enforced. The Mayor of Shelbyville and the Board of Health passed a resolution of thanks for the visit and help rendered.

May 30, Michigan City.—I visited Michigan City in accordance with an invitation from the Lake County Medical Society in order to read a paper on the subject of "The Early Diagnosis of Tuberculosis," and to deliver an illustrated lecture to the public upon "Tuberculosis; Its Prevention and Cure." I was cordially received by the representatives of the association named and by the city and county health officers. I think not a little good was accomplished for the public health cause.

June 22, Richmond.—On this date I visited Richmond in order to deliver a lecture at a called meeting of citizens upon the "Prevention of Tuberculosis." A good audience gathered in the High School auditorium, and afterward the Wayne County Anti-Tuberculosis Society was organized with 96 charter members. Mr. Jesse Reeves was elected president.

The Annual Health Officers' School was held June 28 and 29. The Claypool Hotel, Indianapolis, was made headquarters, and, with the exception of two sessions, the meetings were held in the The following program was carried auditorium of the hotel. out and, in addition, a special lecture was given by the Secretary concerning "Recent Improvements in Antitoxin."

PROGRAM.

First Session, June 28.

· 10:00 a. m.-Called to order by T. Henry Davis, of Richmond, Presi-

dent of the State Board of Health.
Welcome
Needed Medical and Health LegislationGlen Kimball, Marion
The Weak Places in the State's Sanitary Service, and How They May
Be StrengthenedJ. N. Taylor, Crawfordsville
Discussion

Second Session, 2 p. m.
The Prophylaxis of SyphilisA. W. Brayton, Indianapolis
Discussion.
Eyes, and How to Care for ThemJ. McLean Moulder, Kokomo
Discussion.
Slaughter-House and Meat InspectionA. W. Bitting, Lafayette
Discussion.
Question Box.

Third Session, 8 p. m.

Tuberculosis Symposium.
The Health Officers' Opportunity in the Combat Against Consump-
tionGeo. T. McCoy, Columbus
Treatment of Joint Tuberculosis at Sea Breeze F. A. Tucker, Noblesville
Home and Foreign Sanatoria (Lantern Illustrations)
J. N. Hurty, Indianapolis
Discussion.

Fourth Session, June 29, 9 a. m.

Question Box.

Widal and Diazo Tests for Typhold Fever. T. Victor Keene, Indianapolis Discussion.

The attendance was 241. All city, county and town health officers were summoned. The interest and discussions were excellent. Sveral letters received since the meeting from various gentlemen who attended confirm the belief that the conference resulted in much good for the public health cause.

SANITARY SURVEY OF SCHOOLHOUSE AT SPICELAND, HENRY COUNTY, JUNE 29, 1906.

This building belongs to a society known as "The Spiceland Academy."

Site.—The site is satisfactory in every way. Indeed, it is a beautiful park and has excellent natural drainage.

Building.—It is an old frame building and has been painted within the last two years. It has two stories, four schoolrooms, two halls, three cloakrooms. The stairs are of easy ascent, floors throughout the building are bad; foundation is stone; no basement. There is a dugout, or hole, beneath the building in which are placed two ordinary wood stoves with galvanized iron jackets. From these jackets tin pipes conduct heat to the various rooms above. This is a makeshift furnace, receiving all its air from the dugout or hole. It is therefore true that the rooms above receive ground air and frequently damp air which has been warmed by passing over the surfaces of the stoves. This heating arrangement is unsanitary, inadequate and dangerous. In addition to this makeshift furnace stoves are placed in each room.

The building is too much shaded. Large, beautiful shade trees spread their foliage on every side, obstructing sunshine, light and air.

Primary Room.—This room is 33x33x13 feet, 52 seats, enrollment 50: lighted by eight windows; ventilation by windows alone; no ventilating ducts. There is ample space in this room for the children enrolled and the light is ample, but the teacher is compelled to look into the light. Slate blackboards.

Room No. 2.—This room is 33x33x13 feet, contains 39 seats, enrollment 36. It is lighted by eight windows, blackboard is painted on the

walls and shiny and chipped in places. Part of the blackboard is wood; the ceiling is broken and has failen off in several places. This room is heated by a coal stove in conjunction with the makeshift furnace above described.

Room No. 3.—This room is 24x45x13; contains 50 seats; enrollment not given. It is lighted by eight windows; teacher is compelled to look into the light; blackboards are painted on the plaster walls and shiny and chipped. The room is heated by a coal stove in conjunction with the makeshift furnace above described.

Room No. 5.—This room is 33x24x14 feet, and contains 42 seats; enrollment is 46. There is ample space and light for the pupils, but the teacher is compelled to look into the light. The slate blackboards are satisfactory. The room is heated by a wood stove in conjunction with the makeshift furnace above described.

Outhouses.—There are two outhouses for the sexes, but both are old, dilapidated frame affairs in an awful condition.

Opinion and Recommendations.—In addition to what has been told above, the testimony is to the effect that in cold weather school is frequently dismissed from this building or the children hover around the stove to keep warm. Inquiry developed the fact that coughs, colds, catarrh and rheumatism prevail every winter among the students. All of this is to be expected from the survey above given. It is my opinion the schoolhouse is unsanitary in every way and it is certainly true that many children have been injured in their health in the past while attending school in it. Indeed, I have no doubt that many children have not only suffered from sickness, but also have died in after life from injuries received to their health in this damp, poorly lighted, poorly heated and insufficiently ventilated old schoolhouse.

I recommend that the above schoolhouse at Spiceland, Indiana, be condemned for school purposes, the condemnation to go into effect June 1, 1907, and that the Spiceland school authorities be ordered to make certain sanitary improvements for this winter. The following proclamation of condemnation is recommended:

PROCLAMATION OF CONDEMNATION BY THE INDIANA STATE BOARD OF HEALTH, FOR PUBLIC SCHOOL PURPOSES, OF THE FRAME SCHOOLHOUSE AT SPICELAND, HENRY COUNTY, KNOWN AS THE SPICELAND ACADEMY.

Whereas, It appears to the satisfaction of the Indiana State Board of Health in regular session July 13, 1906, that the frame schoolhouse belonging to the Spiceland Academy, situated in the town of Spiceland, Henry County, Indiana, and used for public school purposes in said town of Spiceland, is unsanitary, causing sickness among the pupils, and is unfit for school uses; therefore it is

Ordered. That said schoolhouse is condemned and it shall not be used for school purposes the coming school term of 1906 and 1907 unless the following improvements are made, to-wit:

First. All windows shall be made easily movable for ventilation purposes and shall be provided with dark-colored shades, so light may be properly tempered.

Second. All stoves shall be provided with galvanized iron jackets and the unsanitary and dangerous jacketed stove arrangement in the hole beneath the building shall be abolished. It is recommended that a basement of proper size, with walls and cemented floor be made, supplied with efficient furnaces, taking air from the outside.

Third. Decent outhouses shall be supplied for the sexes and shall be kept clean and decent, with good walks leading to them. And it is further

Ordered, That, as the said schoolhouse at Spiceland, Henry County, Indiana, can not be made truly sanitary by repairs, and as the improvements ordered are merely temporary makeshifts intended to obviate the necessity of closing the school at Spiceland. Henry County, Indiana, the coming winter, therefore the said frame schoolhouse, belonging to the Spiceland Academy, at Spiceland, Henry County, Indiana, is finally and absolutely condemned for public school purposes and shall not be used for such purposes after July 1, 1907; and any board of school trustees, or any township trustee, or any school teacher, or any other person who shall violate this proclamation of condemnation and shall hold school in the said schoolhouse after July 1, 1907, shall be prosecuted in the courts of the State by the Attorney-General as in the statutes provided.

Passed July 13, 1906.

After discussion the above proclamation was unanimously passed as an order of the Board.

REPORT OF INSPECTION OF THE SCHOOLHOUSE AT EMINENCE.

By T. Victor Keene.

May 31, 1906.

Approaches.—The only approach to the school building is a gravel road. There are pieces of an old wooden sidewalk remaining, but the gravel road is the approach commonly used. This is a good roadway, but in rainy weather it is certain to be muddy. The schoolhouse is located ten feet off this road. Leading from the road to the entrance of the building is a wooden walk about six feet wide and in fairly good repair.

Grounds.—The ground is located on a high point, with excellent drainage. The entire area of the ground is about one acre. The building is located on the roadside of the ground at about its center, thus dividing the ground into two play lots—one for the boys and one for the glris. It is fairly well sodded and well drained. On the grounds are two closets of the type ordinarily seen in country schoolhouses, but both are in a very dilapidated and dirty condition. One closet is 75 feet from the driven well, from which the water supply for the school is taken, but the drainage from the closet is away from it instead of towards it.

Description of School Building.—The schoolhouse is a two-story brick building, with brick foundation and no basement. The building occupies an area of about 50x25 feet, with a small hall in front, about 12x10 feet. The building is in a very dilapidated condition; the walls building, and in some places to such an extent that it can be readily seen with the

naked eye. Efforts have evidently been made from time to time to stregnthen the weakened walls, for there are numerous bolts and braces present. The interior consists of four rooms, about 25x25 feet. The rooms are all of the same dimension and general height. Each room has five windows, 2½x6 feet. The windows were in good condition, every window in the building being easily raised and lowered, and the glass plates were all intact. Each room was heated by a stove, which was not surrounded by protective screen. I was told that in the winter time those children sitting near the stove suffered because of the heat, while those far removed from the stove were always complaining of lack of heat.

The blackboards in all the rooms were made by painting the plastering with a heavy black enamel paint and were glossy and very hard on the eyes. In many places they were cracked and chipped. The ceilings were all of painted wood and were 15 feet high. The plastering on the side walls was loose and in many places had fallen off. The floors were all shaky and unsafe. In one room, owing to the bulging of the brick wall, the joists had slipped out of the sockets in the brick wall and the floor in that part of the room sagged three inches. In places the bricks in the wall were so loose that they could be picked out with the hand.

The primary room was much too small. This room was about 25x25 and accommodated 67 pupils. The seats were old fashioned straight-back ones, and owing to the bad condition of the floor many of the seats were not level; in some instances one of the seats would be two inches lower than the other, although the desk in front would be perfectly level. The desks were old and were of different sizes and models. This primary room was always over-rowded, according to the statement of the teacher. Leading from one side of this primary room was a cloakroom, 18x6. The cloakroom did not have enough hooks to accommodate the number of pupils in the school. It was necessary for a child before entering the cloakroom to pass into the schoolroom, as the only entrance was by way of the schoolroom. This is a very bad condition.

Although the roof had apparently been shingled very recently and was in good repair, the statement was made to me that every time it rained or stormed water leaked into the room, and I know this to be a fact, because it was raining at the time the writer was inspecting the school, and in one portion of the rickety floor was a puddle of water, and water could be seen dripping down the wall. The blackboards in this room were in bad condition, being glazed. The seating capacity of this room was much less than its floor area would seem to indicate, owing to the fact that the heating was by a stove, which caused a loss of considerable floor space. The other room on the ground floor was of much the same type as the one just described—had the same glazed blackboards, the same number of windows and window arrangement, the same heating plan, the same variety of desks, the same cloakroom arrangement, except that the area of this cloakroom was about 12x6 and contained a small round window about 18 inches in diameter. Only 30 pupils are in this room, it being used for pupils from eight to fifteen years of age. This room was in a worse condition than the one previously described, for the reason that the floor was less solid and the brick wall less safe. It would have been a very simple matter to have picked out part of the wall with the hands, the bricks were so loose.

Halls.—From the downstairs hall a set of winding steps about six feet wide lead to the second story. This stairway was solid, but in case of fire, if there would be any resulting panic, it is hard to see how it would be possible to avoid injury to pupils on this stairway. It is, however, well lighted.

On the second floor there are two rooms of the same size as the ones just described.

Water Supply.—The teacher of the school informed me that all the drinking water used was obtained from a driven well, which is said to be 101 feet deep. There were no water buckets or cups at all in the school, the children going to the well and drinking freshly drawn water. There were two cups on chains attached to the pump.

Surroundings.—There are no houses nearer than 250 feet.

Managing Board.—Mr. J. C. Blunk, of Littlepoint, is trustee, and Mr. H. A. Blunk and H. K. Lee, of Hall, R. R. No. 2, are the members of the Board of Education.

Local Feeling.—There seemed to be considerable local feeling against the use of the building. Several citizens told me that whenever a storm came up they immediately went to the schoolhouse and removed their children; that in several instances the teacher had taken it upon himself to dismiss the school because of a storm. Mr. H. A. Blunk, a member of the Board, stated that it was his desire to repair the building to such an extent as to make it safe, which he admitted was not the case at the present time, and to then, later, if possible, secure the abandonment of several small district schools by uniting them into one large school, and then erecting a modern building at an expense of from \$16,000 to \$20,000. Mr. J. C. Blunk, Trustee, would not express an opinion regarding the situation. He admitted that the building was unsafe, but seemed to think the building could be repaired and made so. He stated that he personally did not think it advisable to repair the building for at least a year, for it could probably be done cheaper later than at the present time. However, he expressed himself as perfectly willing to do anything that seemed desirable. Mr. H. K. Lee did not exprss any opinion.

This schoolhouse is the property of the township, and the township will be the body that will have to build a new building or repair the old one. The township at this time is nearly out of debt, according to the statement of the Trustee, and is in a position financially to do anything which may be indicated.

I recommend that this building be condemned, as in my judgment it is impractical to attempt to repair it.

After discussion this school building at Eminence was condemned.

REPORT OF INVESTIGATION OF TYPHOID FEVER EPIDEMIC AT GREENCASTLE.

By Dr. Helene Knabe.

The undersigned was sent to Greencastle, Indiana, April 10, to investigate an epidemic of typhoid fever which has appeared there.

Upon my arrival I conferred immediately with Dr. W. M. McGaughey and Dr. Hutcheson, the local and county Health Officers. Fifteen cases had been reported, one of whom had died April 7. The majority of the cases were children, some in school, others below six years. Only a few adults were sick at the time.

There were a few cases known to have a little fever during the preceding weeks, but none of them had been diagnosed typhoid fever. The physicians in whose practice the cases occurred gave me their addresses and I obtained specimens of blood from all of them. I was also fortunate in meeting four persons who had not been under a physician's care at all, but in every case enough of a history could be obtained to suspect typhoid fever, and here also I took blood for Widal tests. Other cases had been diagnosed lagrippe, nervousness, remittent fever, etc.

Of the twenty-two specimens of blood to which I applied the Widal test every one showed a pronounced reaction, thus clearly demonstrating that the infection is now widespread in Greencastle.

The universal belief among the citizens of Greencastle was that the infection had come through milk obtained from the Forrest Hill Dairy, owned by Mr. J. W. Lemmink. Two sons of this family were sick for a short time in March, though not diagnosed typhoid fever, and as most of the patients had been taking milk from this dairy they suspected it first of all. Careful consideration of the circumstances, however, seems to show that a cause other than milk was at work here, for some of the families in which typhoid fever has appeared use no milk; others do not get it from the Forrest Hill Dairy.

An investigation of the sanitary conditions in Greencastle reveals defects enough to account for the spread of typhoid fever, or any other infectious disease. The town has about 5,000 inhabitants and its location is near the river. Part of the streets are macadam and reasonably dry; others are not improved and in very bad condition.

Greencastle has no sewer and many dwellings are provided with surface privies, which do not often require cleaning, since after a rain the soft earth absorbs nearly all of their contents; at the same time water appears in many a cellar in town. Not infrequently I found people who stated that their cellars were damp during the greater part of the year.

The cleaning of streets is not given sufficient attention. Many of the alleys are in a very bad condition, for instance, the alley on Vine street, behind W. L. Deuman's property, is a regular dumping ground. Center street, bordering the campus of De Pauw University, is strewn with all kinds of filth. On Water street, very near to the point where it crosses Washington street, I saw a large accumulation of waste from a grocery store, decaying vegetables, etc. Besides these places mentioned there are many others equally as bad.

Very unsanitary is a contrivance which I now wish to describe. A

part of the hotels and residences are supplied with cesspools, from which a line of tiling is laid, eventually draining at some point in an open gutter on the streets. These drains in warm weather give rise to a condition that is no credit to any town. The day of my visit to these places was cool and damp, and the heavy rain had washed away most of the contents of these cesspools, still there hovered the strong odor of urine about the outlets of the drains. Residents of the place declared it was not at all uncommon during the summer, after a rain sufficient to overflow the cesspools, to find their contents lying in the gutter, covered with flies and emitting a most unpleasant odor.

One place standing in sore need of betterment is in the rear of Florence Hall, which is used for a boarding house for De Pauw students. The untidy back porch, with its dirty uncovered barrel, half filled with waste from the kitchen; the outhouse a short distance away, which drains its foul contents into a shallow ravine after a rainfall, where a tiny stream of water washes away some of the filth, to distribute it where the ravine extends in the immediate vicinity of dwellings; these are conditions which, if not changed very soon, will surely give trouble in the coming warm season. There are also several cesspools in this location. One of them is leaky, the seepage appearing on the slope at the side of the ravine; the other two were filled to the brim, when I saw the place, one of them having run over the week before on account of heavy rains.

An old well is also to be found in this vicinity. The brick with which it is built over is crumbling away, and as it is on the level with the grass, with no railing there to hinder any one from walking right into it, there is reason to suppose that some one may come to his death by drowning. The well should at least be fenced in.

Water Supplies.—Greencastle receives a large part of its water from water works. The filters are laid in the bed of ————— Creek. A large open well receives the filtered water. From here it is pumped into a standpipe over thirty feet high, and thence passes into the general pipe system. The water has been of good quality until a year ago, when it began to be muddy after heavy rains. Nothing was done, however, to get at the root of the trouble. Since the present epidemic of typhoid fever appeared the Health Officer sent some of the water to the State Laboratory and the examination showed the water to be badly polluted.

When I visited the water works I noticed that there was an intake from the creek. I suggested that there might be the source of the trouble. The engineer stated that it was sealed, however, but when the water in the creek was high he could see the muddy water come in from the filter, an evidence that the filter was damaged.

At the present time I am certain of 37 cases, four of which may be accounted for by direct contact, because they developed subsequently to nursing a patient in their house. In eleven instances two cases occurred in the same family, but seven of them came so near together that I could not positively determine whether or not one of the patients had been infected from the other. I am inclined to believe the infection in the majority of these cases occurred at the same time. In one family three cases occurred at the same time. Two of the little patients are in school; the oldest sister, age sixteen, at home. These three cases were diagnosed

as remittent fever. I did not have a chance to get blood from the younger children, and they are not included in the above number. If the statement of the attending physician—"all three had the same trouble"—is to be taken as correct, the number of cases rises to thirty-nine, for the blood of the older sister gave a positive Widal reaction. Three other cases of whom I was unable to get any blood on account of temporary absence were children, two of whom had been with their mother in Muncie four or five weeks ago and when there a short time became sick. The diagnosis was "indigestion." Now the mother is in bed with fever and her blood shows positive Widal reaction. (Mrs. Maxwell.) The third case is Mrs. Detro's little boy. She stated that he had been sickly and is now very anemic. Mrs. Detro has been under a physician's care for "nervousness." Her blood shows also a typhoid reaction.

Of thirty-nine cases (omitting the three last mentioned) twenty-four have the city water as their house supply and seven drink it every day in school. Four cases, including the deceased, had their places of employment down town, and probably used the city water there. In six of the houses where typhoid fever is now present the water supply is from a dug well; in three cases cistern water is used.

The first case which appeared this winter was that of a teamster, Mr. Gladwell, and he stated that he had been drinking almost anywhere around the country, from little ditches, etc., so that there is a probability of his having been infected outside of the city. The other case, Irving Brown, age seven, at watercress which he and several boy friends were picking at a branch outside of the city. This branch of water is known to receive sewage, and the child fell ill on the fourteenth day after eating the cress.

Taking it altogether, the water and general unsanitary conditions seem to me the most potent factors causing this epidemic.

Summary-

Number of cases reported		
	_	37
Total		39

INSPECTION OF DAIRIES AT GREENCASTLE.

In connection with the investigation of the epidemic of typhoid fever at Greencastle I inspected the following dairies:

De Pauw farm dairy, owned by Mr. Harry Nugent and Dr. Bence. This dairy does not supply many customers; ten milk cows are kept. The stable is not very well arranged, providing also shelter for the horses. The floor on which the cows stand is covered with boards; walls and ceilings are not as clean as they ought to be. The stable also held many chickens. The water is used for washing the cans and is taken from a spring. This spring is covered by a small stone house. Bottles and milk cans are kept outside.

Dairy of Mr. Sidener: Thirty-five cows. The barn floor is partly wood and partly clay, which was very soft on the day of my visit. I happened to get there during milking time. Neither the man who did the milking nor the cows did look very clean. The milk can was kept in the stable during milking time. Harness and other utensils were hanging in the same barn. One cow was sick, probably hurt, having horned itself a week before with other cows.

Dairy belonging to Mr. Paul Tucker: Twenty-five cows. Barnyard very dirty. The dung from the stables had not been hauled away for several weeks and was heaped up around the barn so that it was trouble-some to get inside without wading through it. The cows did not look very clean, neither did the inside of the stable. The milk is taken into the house, down a small, dingy stairway into a kitchen in the basement. There it is strained and filled into cans or bottles. This kitchen was clean when I saw the place. The trough around the cistern pump contained chloride of lime. Filtered cistern water is used for cleaning and scalding cans, etc.

Forest Hill dairy, owned by J. W. Lemmink: On account of the suspicion which people had regarding the spread of typhoid fever from this place I made a thorough examination of the whole place. The dairy is several miles away from town, in the open country, with buildings situated on a little hill. A large barn accommodates the cows. About one-quarter is utilized for the horses, but they are far removed from the cows, and between them is a high board wall. The floor is made of clay and is dry and hard. A wooden gutter behind the cows is kept very clean, and everything is in good condition. I saw this dairy at milking time, and dare say it was done in the cleanest way in which I have yet observed. The air in the stable, both doors of which were open, was very good, and the cows were very clean. Mrs. Lemmink, who did the milking, used a two-quart cup to receive the milk. When half filled this was emptied into a bucket which stood covered in the barn door. The straining was done on the side porch, where a table, bottle rack, etc., were provided for this purpose. Cans, strainer, etc., as well as the table and small tubs in which the bottles were scalded, were scrupulously clean. Some of the bottles were kept in the bottle rack, mouth downward, others in boxes provided with oilcloth cover, and all very clean.

The milk is rich and of good quality, as shown by the examination made in the Laboratory of Hygiene, which showed 5 per cent. fat. The house in which Mr. Lemmink and his family live is old, but the rooms are kept clean and tidy. A privy vault at the side of the house opposite from the porch where the milk is handled is not in good condition, and Mr. Lemmink stated that he was preparing to remove it and make a new one further away. Its drainage does not come near the house, nor could it go into the spring from which the water is used. This spring is quite a distance from the house and also from the barn, but some seepage from the barnyard is evidently getting into it, as shown by analysis of the water which was made a short time ago in the Laboratory of Hygiene. When I saw the place the barnyard was clean and dry. Mr. Lemmink stated that the cows were kept in the barn only at milking time, except in very cold winter. One case of typhoid fever occurred in this house

two years ago; other cases have been found in town more or less at all times. There were also several cases in town before the two children, Charles and Lawrence, were sick this winter. Both children had no symptoms to make any one suspect typhoid fever, and as Dr. Hutcheson, who is the family physician, verified the statements made by Mr. and Mrs. Lemmink in every particular I have no doubt that they were true. Dr. Hutcheson's books showed that he was called only once, because the children were sick with acute symptoms, having had a very hearty meal the day before, and twice after that time some members of the family came to the doctor's office for medicine.

There is, of course, no doubt that both of the children had a mild case of typhoid fever, because their blood gave a positive reaction to the Widal test.

The foregoing investigations I have carried out to the best of my ability, taking great care not to be biased by any opinion advanced by persons with whom I came in contact.

HELENE KNABE, M. D.

Renewal of Permits.—After consideration of applications, the renewal of permits to the J. T. Polk Co., Greenwood, and to the plants of the American Tin Plate Company at Elwood, Anderson, Muncie and Gas City, were ordered, and the Secretary was directed to notify the parties concerned.

It was ordered that H. E. Barnard should represent the Board at the National Association of State Dairy and Food Departments, to be held at Hartford, Conn., July 17, 18, 19, 20, 1906, his expenses to be allowed.

FOURTH QUARTER.

REGULAR MEETING OF THE STATE BOARD OF HEALTH.

October 12, 1906.

THE AFFAIRS OF THE FOURTH FISCAL QUARTER AND OF THE THIRD STATISTICAL OR CALENDAR QUARTER CONSIDERED.

Called to order by President Davis at 2:30 p. m.

Present: Drs. Davis, McCoy, Tucker, Wishard, Hurty.

Minutes of last regular meeting of July 13, 1906, read and approved.

QUARTERLY REPORT OF THE SECRETARY.

I have to report that the work of the various departments has gone on without interruption and without friction during the quarter.

The Secretary made twenty visits during the quarter, as follows:

July 2, Spiceland, on account of inspection of schoolhouse, at request of citizens.

July 9, Frankfort, account of inspection of tuberculosis conditions and conference with city Health Officer.

July 25, South Bend, account of tuberculosis exhibit and lecture to public audiences.

July 30, Kennard, account of inspection of schoolhouse, at request of citizens.

July 31, Petersburg, on account of inspection of schoolhouse, at request of citizens.

August 6, Kokomo, to meet the County Superintendent and Trustees of the county to consider the subject of school hygienc.

August 8, Greensburg, on account of tuberculosis exhibit, and to lecture to Teachers' Institute and to public audiences at night.

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August 20, Decatur, on account of tuberculosis exhibit and to lecture to Teachers' Institute, and to lecture to popular audience at night.

August 27, Merom, to lecture before the Merom Chautauqua upon the subject of "The Prevention of Disease."

August 30, New Castle, to consider school hygiene before the Teachers' Institute, and to meet the County Superintendent and Trustees.

September 5, Noblesville, to lecture before the County Teachers' Institute upon the subject of "School Hygiene," and inspect schoolhouse.

September 7, Monticello, to lecture before the County Teachers' Institute and meet with the County Superintendent and Trustees to consider school hygiene.

September 16, Ottawa, Ill., to visit the Ottawa Tent Colony, and to study the outdoor treatment of tuberculosis as practiced at that place.

September 20, Madison, on account of tuberculosis exhibit, and to make public lecture on the subject.

September 25, Columbia City, to appear before the Whitley County Medical Society, read a paper upon "The Prevention of Disease," and to deliver a public lecture in the evening.

September 26, Peru, to lecture upon the work of the Board of Health and the prevention of disease before the Y. M. C. A.

September 28, Richmond, to meet Prof. Sackett and Dr. Davis to consider the proposed employment of Prof. Sackett to make a sanitary survey of White River.

October 2, Rochester, to meet with the Fulton County Medical Society to present the subject of "Disease Prevention," and to lecture in the evening upon the "Prevention and Cure of Tuberculosis" before a popular audience.

October 8, Muncie, to lecture before the State Charities Conference upon the subject of "Tuberculosis."

October 10, Muncie, to read a paper before the Indiana State Federation of Women's Clubs, title, "What Can the Federation Do to Help Forward the Public Health Work."

October 11, Winona, to read a paper before the Women's Federation of Literary Clubs, title, "Tuberculosis; Its Prevention and Cure."

TUBERCULOSIS MEETING AT SOUTH BEND.

On July 25, upon invitation of the St. Joseph Medical Society and the health authorities of South Bend, I visited that place, carrying with me the tuberculosis exhibit of the Board. Upon arrival said exhibit was promptly put into position, and at 2 o'clock a lecture upon the "Prevention of Disease" was delivered to an audience of about five hundred persons. In the evening the exhibit was visited by one thousand persons, and when gathered in the audience chamber I made an illustrated address upon the "Cure of Tuberculosis in the Incipient Stage." The following day, July 26, another audience inspected the exhibit and further addresses were made. The South Bend daily papers published full accounts of the meeting and the addresses, and gave editorials upon the subject. It is believed that this visit was attended with good results, and was many times worth the work and expense given to it.

SCHOOLHOUSE AT KENNARD.

The school building at Kennard was condemned by the State Board of Health last fall, and the authorities were in dispute as to the location of the new building. The controversy ran high, and at last all concerned agreed to abide by the decision of the Secretary. Accordingly I visited the place, met the committees of citizens, inspected the various proposed sites, and made my recommendations. I have since learned that a second compromise was effected, and the old site was adopted.

PETERSBURG SCHOOLHOUSE.

The schoolhouse at Petersburg is brick, a very old structure, and unsanitary in every respect. The people of the city know this to be true. Several letters were received from citizens asking the State Board of Health to make inspection of the building. All of these represented that the majority of the patrons were afraid of the present schoolhouse because of its cracked walls and general unsafe condition, and also because it was unsanitary. They were told to petition the State Board of Health in regard to the building to show that the people were in favor of action. Accordingly the following petitions were received. The first one was dated May 11, the second August 3, accompanied by a letter signed by the Treasurer and Secretary of the School Board:

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PETITION.

Petersburg, May 11, 1906.

State Board of Health:

Gentlemen—We, the undersigned patrons of the Petersburg public school, do hereby petition you to visit this place and make an examination of the school buildings here. In our judgment the building is unsafe and unsanitary and should be condemned.

DR. T. W. BASINGER, Ex-Secy. County Board of H., and 69 others.

Petersburg, August 7, 1906.

We are enclosing you a certified copy of the petition gotten up here in the last few days relative to the building of a new schoolhouse. Mr. Nichols, president of the School Board, is out of town and will not be home for ten days. His absence accounts for his not joining us in the affidavit herewith attached.

The original petition is kept here to file with the clerk of the town, to which officer you are referred if you deem it advisable for further information. The petition is to be brought before the Town Board for the purpose of securing a permit in accordance with the law to proceed to the erection of a school building.

In the last town election there were 489 votes polled. Since then, owing to the closing down of the glass factory, about eighty voters have gone from here, leaving at this time about 409 voters in the corporation. As you will observe, there are 351 signatures to the petition, making almost 86 per cent. of the present voting population of the town. Some voters are out of town and were not canvassed. In all there are not more than twelve or fifteen voters in the corporation opposed to the plans of the School Board, and they are under the direct influence of interested parties.

J. R. CHEW, Treasurer.

H. H. TISLOW, Secretary.

PETITION.

Petersburg, August 3, 1906.

We, the undersigned taxpayers and patrons of the Petersburg, Indiana, public schools, knowing the unsanitary and dangerous condition of the public school buildings in said town, and further knowing the said school buildings are inadequate to properly accommodate the large number of school children in said town, hereby ask that a new and commodious school building be erected at the earliest possible date.

I. H. LAMAR, M. D., and 350 others.

On account of these petitions the Secretary visited Petersburg on July 31. A delegation of citizens, headed by the members of the School Board just named, and accompanied by the entire town board, accompanied the Secretary to the building. A very casual inspection shows it to be unsafe, for the walls on every side



are cracked. It is braced with iron rods running through the building from all four directions. The floors are in bad repair, every room improperly lighted, insufficiently ventilated, and insufficiently warmed. The stairway leading to the upper story is boxed part of the way, narrow and steep. It is unnecessary to here detail the size of the rooms with the lighting facilities, because the whole building is so bad from every point of view. There are closets for the sexes in the basement which are hardly They have cemented floors, but are dimly lighted by windows which enter just above the ground level. The entrances to said closets are from the rear of the building, and the children must walk from the front around the building to use them. said above, every feature of this building is unsanitary, and it is also unsafe. I, therefore, urgently recommend its absolute condemnation for school purposes. The building is occupied at this time, has had some repairs and further bracing, and it perhaps would be best not to close the building, but to let it be used this winter, and to pass an order of condemnation to take effect June 1, 1907. It is to be regretted that the petition could not be attended to sooner. Had it been possible for the Secretary to make the survey soon after the first petition was received, which was May 11, the condemnation might have been early enough to secure a new building for this winter.

KOKOMO.

On August 6 I visited Kokomo to meet the County Superintendent and Trustees of the county to consider the subject of school hygiene. Two hours work was consumed in discussing what could be done to better the sanitary surroundings of the school children in the country schools of Howard County. The fact in regard to the prevalence of imperfect vision in school children was presented, and a sample of Snellen's vision chart was shown. The Trustees were urged to purchase a supply of these charts, and to direct their teachers to watch the children closely and examine the eyes of all who wrinkled their foreheads when looking at their books and who would be discovered glancing at their work at various angles. They were urged also to require that the teachers examine the ears of children who seemed dull

and would ask to have questions repeated. The Trustees were unanimous that they would attend to this. Further recommendations were given in regard to ventilation and lighting the schoolrooms, also in regard to keeping them clean. Prof. E. E. Roby, County Superintendent, formulated the recommendations in writing, and they were agreed to by all present. I am confident this conference with the Trustees of Howard County was attended with excellent results.

Meeting of County Commissioners.—Finding that the County Commissioners were in session, I called upon them with the secretary, Dr. R. H. Smith. In a general conversation upon the care of the public health the facts of the relations of the County Board to the work were fully brought out. All three of the Commissioners were deeply interested, and a formal meeting of the County Board of Health was called. An order was issued authorizing the County Officer to have circulars printed upon the prevention of various diseases and circulated throughout the county. An order was also passed that the Secretary should also employ a deputy when necessary for the disinfection of houses which had been occupied by cases of infectious diseases. It is certainly true that this conference with the County Health Board resulted in much good.

GREENSBURG.

On account of an invitation from the Decatur County Medical Society and the County Superintendent of Schools, I visited Greensburg August 8. Dr. Knabe accompanied me to aid in the management and presentation of the tuberculosis exhibit. We had two meetings, one in the afternoon and one in the evening. The tuberculosis exhibit was placed in position in one of the large rooms of the high school building, and during the day was visited by several hundred citizens and all of the teachers, numbering 210. A lecture upon school hygiene was delivered before the teachers in the afternoon; and in the evening, the hall being crowded and overflowing, an illustrated lecture upon tuberculosis was given. A vote of thanks was offered for the instructions, and also a vote of confidence and approval of the general work of the State Board of Health.

DECATUR.

I visited Decatur August 20 in answer to an invitation of the citizens of the city and the county superintendent. The tuberculosis exhibit was taken along and placed in position in the lecture room of a church where the teachers' meetings were held. This exhibit was visited by several hundred citizens and all of the teachers. In the afternoon a lecture upon school hygiene was delivered before the institute, and in the evening a popular illustrated lecture upon the prevention and cure of tuberculosis. The audiences in both instances were large. In the evening all who applied could not be admitted. As in former instances of this kind, resolutions of thanks and confidence and approval of the work of the State Board of Health were passed.

MEROM.

On August 22 I visited Merom, Sullivan County, to lecture upon disease prevention and the public health at the Merom Chautauqua. This Chautauqua Assembly has become quite celebrated. The grounds are situated on the east bank of the Wabash River, overlooking vast areas of beautiful country, the Wabash being visible in its windings for many miles. It is a beautiful spot, and a fit place in which to study the questions which are usually presented at assemblies of this kind. The audience numbered about fifteen hundred, and close attention was given to the teachings which were offered.

NEW CASTLE.

August 30 I visited New Castle to address the annual Teachers' Institute upon the subject of school hygiene and the general prevention of disease. The conference was held in the court room of the county court house. Two hundred and fifteen teachers were present, and probably one hundred citizens. The address, which was along the usual lines, was well received, and a warm resolution of thanks was passed.

NOBLESVILLE.

September 5 I went to Noblesville to lecture upon school hygiene and the general prevention of disease before the County Teachers' Institute. Over three hundred teachers were present

and a number of citizens. This is the third time the Secretary has been invited to Noblesville, and he thinks this indicates that the people of that county have become deeply interested in disease prevention work. Much of this interest is undoubtedly due to the work of Dr. F. A. Tucker, who has persistently made known to the public the advantages to be derived from the ounce of prevention. Close attention was given to the lecture, and a resolution of thanks was passed.

The Britton Schoolhouse.—This schoolhouse is in Delaware Township, Hamilton County. I visited this schoolhouse to make a survey of the same in company with Dr. F. A. Tucker, September 5.

Site.—The site is satisfactory, having good natural drainage but no artificial drainage, which hardly seems necessary.

Building.—The building is an old dilapidated frame, stone foundation, no basement, and only one room. This room is 30 x 24 feet. It contains 48 desks and has an enrollment of 17. The floor is bad; ceiling is broken in places, and has fallen off; no cloakroom; heated by stoves; ventilation only by windows and doors; roof is in bad condition. Windows are six in number, three on each side, and furnish sufficient light, but are objectionable on account of cross-lights. The chimney is cracked and rests upon the joists which support ceiling. The chimney is unsafe. Further evidence in dilapidation lies in the fact that the paper is coming off.

Outhouses.—These are separate for the sexes, but dilapidated, and in places in awful condition.

Conclusion.—This schoolhouse is unfit for school purposes, and I recommend that it be condemned.

MONTICELLO.

September 7 I went to Monticello to lecture before the County Teachers' Institute. The meeting was held in the audience room of the high school building. Early in the spring the old high school building at Monticello was abandoned, thus necessitating the construction of a new one. The new building is beautiful, well built, and every attention has been given to sanitary features. The audience numbered over three hundred, and the usual lecture

was received with attention and respect, and the usual vote of thanks was passed, containing a clause expressing confidence in the work of the State Board of Health and approval of what it had done.

OTTAWA, ILL.

I visited Ottawa, Ill., September 16, in order to become acquainted with the work being carried on there in the cure of tuberculosis in the Ottawa Tent Colony. This institution was founded three years ago by the Illinois State Medical Society in order to make plain to the people that incipient tuberculosis was curable in the climate of this region. The institution started with three patients, an ordinary frame dwelling for an administration building and an old frame structure for surgical and general purposes. In three years the institution has grown until there is now found upon this beautiful site a large administration building, which cost thirty thousand dollars, and seventy-five tents, all arranged in streets. The site of the colony is on the high western banks of the Illinois River. The view from the administration porches is very beautiful. The winding river and the fertile bottoms to the north and woods and meadows to the The grounds are laid out with curved paths and flowerbeds, and the shrubbery has been tastefully placed. Dr. J. W. Pettit is the presiding genius, and is aided by Dr. Butterfield. There were fifty-seven patients at the time of my visit, and five nurses. The treatment of the patients is the well known out-door life, with an abundance of plain, well cooked food given at regular intervals and under rational directions.

The bathhouse, which is a separate building, furnishes every facility required in such a building. Life is entirely out of doors, the tents simply sheltering the patients from the dews and rain. At night when they are in bed the flaps at both ends are opened, and the air blows over their faces and their bodies all night. All tents have wooden floors and are very simple and plainly furnished. Dr. Pettit is a master in this work, for he has built up this institution from nothing until it has become known all over the United States as one of the best conducted and most successful of private sanatoriums for consumptives. I secured sets of blanks used at this institution, also took copious notes in regard

to the management of patients and in regard to diet, entertainments, and the various points used in the cure of the disease. This visit was most satisfactory, and the benefit derived can not be expressed in a few words.

MADISON.

In conjunction with Dr. Geo. T. McCoy I visited Madison September 20 in order to hold a tuberculosis symposium. The tuberculosis exhibit was carried along, and was shown in one of the rooms of the high school building. Many hundred people visited the exhibit, and Dr. McCoy and myself explained its various features. Addresses were delivered in the afternoon and the evening. In the afternoon the audience was small, but attentive and appreciative. In the evening it was large and overflowing the high school. It is certain that this visit to Madison was attended with good results. Many citizens expressed their approval and offered their services in procuring proper legislation in pushing onward the general health cause.

COLUMBIA CITY.

In response to a cordial invitation from the Whitley County Medical Society, I visited Columbia City on September 25. the afternoon I read a paper before the Society entitled, "The Preparation of Antitoxins, Methods of Purification and Notes Upon Its Administration." The paper was given mostly to a consideration of diphtheria antitoxin. Its history was perfectly reviewed, and its preparation was entered into quite minutely. Special attention was given to the purification and concentration of the remedy as discovered and invented by Dr. Gibson of the New York Board of Health. The notes upon the administration were kindly received and thoroughly discussed. In the evening, under the auspices of the society, a public meeting was held in the Methodist Church, where I gave my usual illustrated lecture upon the prevention and cure of tuberculosis. Close and appreciative attention was given, and a cordial vote of thanks was passed.

PERU.

On September 26 I visited Peru to deliver an illustrated lecture upon "Tuberculosis; Its Prevention and Cure" before the Y. M. C. A. I was greeted by a large audience, which filled the hall to suffocation. The effort was certainly appreciated, for a unanimous vote of thanks was passed, and several speakers offered congratulations and confidence upon the work which was being done by the State Board of Health.

RICHMOND.

I went to Richmond September 28 to confer with President Davis and Prof. Sackett in regard to making a sanitary survey of White River. The object of the survey was to determine the degree and amount of pollution which this stream receives, so that authoritative data could be presented to the coming Legislature in regard to the matter.

Upon arrival I first met Dr. Geo. H. Grant, County Health Officer, who expressed himself as highly concerned in regard to the typhoid existing in the city. He reported seventeen cases in September, and at the time of the visit there were eight in the City Hospital. Many mild cases had existed, as was proved by blood examinations made in the State Laboratory. Mr. Barnard, Chemist of the Board, had visited at Richmond and made a survey of the water works, and numerous analyses were made, and his report is inserted herewith. A review of this report shows that the Gorman gallery had certainly received water from the river. Subsequent examinations by workmen discovered a large hole, probably four inches in diameter, leading through the bank, thus confirming the work of the chemist. This hole was stopped up, and appropriate cement walls built along the river's edge at the said gallery. This has completely shut off the river, and analyses since these improvements show the gallery water to be without fault. It is now believed that the Richmond supply is satisfactory in every respect. It is very probable that not a little of the typhoid was spread by the public water; yet it is certain that very many cases were caused by polluted wells. Together with Dr. Grant I visited the homes of six of the patients lying in the hospital with the fever. All of these homes might well be termed

typhoid homes. They all had shallow wells with dirty backyards, and open, reeking outhouses. None of the families were of that degree of cleanliness and neatness which is necessary to keep typhoid at a distance. While two of the patients whose homes were visited might have secured their disease from the public water supply, it is more than probable that they caught it at home.

In the evening, with Dr. Davis, I called upon Dr. Charles Bond, City Health Officer, and there the typhoid situation was thoroughly considered. Reports of the facts obtainable, together with the opinions of several physicians, pointed to the conclusion that the outbreak had passed its height and was now on the decline. It has not been deemed necessary to recommend to the people that the water from the public water supply be boiled, because only one of the galleries was found to be suspicious, and the source of its supply was so quickly corrected.

It was arranged with Prof. Sackett to commence the survey of White River as soon as he possibly could, and he would be paid from the general funds of the Board at the rate of \$250 per month.

REPORT OF EXAMINATION OF THE RICHMOND WATER SUPPLY.

H. E. Barnard, Chemist.

In response to a request from Dr. T. Henry Davis, health officer of the city of Richmond, and Howard Dill, superintendent of the Richmond Water Works Company, on August 27, 1906, I visited the various sources of supply, collected suitable samples for chemical and microscopical analysis. The results of the examination are as follows:

The water supply of the city of Richmond is furnished by the Richmond Water Works Company, and consists of a double system, employing both direct pressure on the mains and gravity system with reservoir. The water is taken from two sources, one the Cooper well, so called, and the other a chain of gallery wells sunk along the bank of the East Fork of the Whitewater at varying distances from the river.

THE COOPER WELL.

The Cooper well is situated near the center of a natural basin having a watershed two and one-half square miles in area. This watershed is largely cultivated land, and consists of several farms, each with a group of buildings, and has an approximate population of thirty persons and a large number of cattle and hogs. None of the farm yards or buildings are nearer than forty rods, and none are so located that drainage flows

in the direction of the well. The well consists of a large bricked basin covered and protected. The basin is about twenty feet deep and fifteen feet in diameter, and contains normally ten or twelve feet of water. The well is sunk in a bed of gravel overlaid with two feet of black loam. gravel is fine and the bed evidently covers the entire area of the watershed, and is, in fact, a large natural filter. The well is supplied with water from this gravel bed, a surface or shallow well water derived from the rains falling upon the watershed and modified by slow filtration and oxidation of organic matter. The temperature of the water is nearly constant at 52 degrees F. throughout the year. An analysis of the water shows a normal water containing a small amount of iron, which slowly precipitates when the water is exposed to light and air. Pathogenic and sewage bacteria are absent. The water from the Cooper well flows by gravity through a 16-inch pipe to the pumping station, being carried over the eight feet of elevation at the crest of the basin by a syphon, and there enters a receiving basin, is mixed with gallery water and pumped directly to the mains, the overflow going to the reservoir

THE WHITE GALLERY.

The White gallery, so called, is simply a well which extends under the ground horizontally for some hundred feet. It is arched over with brick laid in cement and built upon a stone foundation, and so constructed that water can enter only from the bottom. The gallery is 100 feet from the bed of the river, and derives its supply from the watershed extending above and away from the river for an eighth of a mile or more, and from infiltration from the East Fork of the Whitewater. The analysis of the water shows no pollution whatever. The water is of the same composition as the river water, except that a more complete exidation has taken place, as is shown by decreased albuminoid ammonia content, the absence of nitrites and increased nitrates.

It is evident that the earth bank, 100 feet or more in thickness, between the gallery and the river is acting as an efficient filter and is removing entirely all of its undesirable characteristics that are present in the river water itself.

THE HILL GALLERY.

The Hill gallery, so called, is constructed like the White gallery, being a brick arched gallery 600 feet long, some 150 feet from the bed of the river, which it parallels. The composition of the water is excellent and is identical with that from the White gallery.

THE GORMAN GALLERY.

The Gorman gallery, located along the river bed some twenty-five feet from the bank, and the nearest gallery to the pumping station, is constructed like the other galleries. It receives water from the Hill gallery, and under usual conditions delivers a mixed supply. The sample analyzed was taken at the lower end of the gallery after the supply had been cut off from the Hill gallery, and represents as nearly as possible

the water which collects in the Gorman gallery. The composition of the water is very similar to that of the raw river water. The albuminoid ammonia is higher than in the other gallery samples, the nitrates lower; nitrites are present, and the sample examined showed B. coli present in both 5 c. c. and 1 c. c. samples. It is evident that the Gorman gallery is receiving water from the river that is not fully oxidized, and that the twenty-five feet of earth between the river and the gallery is insufficient to purify properly the water.

THE RESERVOIR.

Under ordinary conditions the water service is by direct pressure on the mains, but, as an auxiliary supply, a reservoir is provided with a capacity of 8,000,000 gallons. The reservoir is twenty-five feet deep, covering an area of two acres, and has a cemented bottom and sloping sides built of stone laid up with loose joints. The interstices between the stones are filled with mud and sludge, and afford a foothold for algae and grasses. The composition of the water in the reservoir, as is indicated by the several analyses made of samples collected on different days, is practically constant and is an average of the supplies from the Cooper well and the other galleries. There is a decided increase in albuminoid ammonia and nitrite contents, together with lowered solids and hardness. The increased ammonia contents are due to the presence in the supply of decomposing organic matter, and the lessened solids to the precipitation of iron and calcium salts in the form of sludge, due to the continued exposure of the water in the reservoir to the sun and air. A bacterial examination of the water made on a sample kept at ordinary summer temperature for twenty hours showed but 31 per cc., after forty-eight hours' growth, a very favorable showing indeed. There is a perceptible odor to the water at the reservoir, which becomes pronounced after the water has stood in a closed receptacle or is heated. The odor is due to the decomposition of a plant of the order "characeae," known as "chara." The characeae are plants which occupy an intermediate position between the algae and the higher cryptograms. The plant has a distinct stem, with whorls or branches at regular intervals. These branches are sometimes spoken of as leaves, and at the lower end of the stem assume a rootlike form which fastens the plant to the mud and gives it stability. This characteristic of the plant makes it impossible to eradicate it except by taking away its means of support. This can be done by cementing the walls of the reservoir. The characeae injure the water only by rendering it unpleasant to the taste and smell. This species possesses the property of secreting calcium carbonate, and properly serve in a measure to soften the water in the reservoir.

SUMMARY.

The water supplying the city of Richmond is of excellent quality, free from an excess of organic matter and iron. The water from the Cooper well is slightly harder than that from the galleries, and contains a slight amount of iron that precipitates out on standing.

The White and Hill galleries provide a supply of pure, well-filtered water, probably largely derived from the East Fork of the Whitewater. The filtration is perfect, and the distance between the galleries and the river insures continued efficiency of the intervening earth well as a filter.

The Gorman gallery receives water from the river which has not been thoroughly purified. It is of practically the same composition as the river, containing high albuminoid ammonia, nitrites and the bacilli coli communis. The Gorman gallery is located too near the river, for while all sediment is removed, the filtration is not sufficient to remove pathogenic bacteria, and oxidation of organic matter is not completed as in the case of the other galleries. The reservoir is well located, protected against outside contamination, and, except for the presence of the chara, in good condition. The chara can best be eradicated by drawing off the water, cleaning out the interstices between the stones forming the sides and washing with a strong cement, so that the crevices are filled and no lodgment provided for mud and sediment. It is not necessary to put a cement floor on the side of the reservoir, as has been done to the bottom, as a comparatively inexpensive wash will serve the same purpose.

In enlarging the capacity of the system, water taken from the basin near the Cooper well or from gallery wells located at least 100 feet from the river bank will be entirely satisfactory, free from the possibility of present or future pollution, and of a moderate hardness and well adapted to the uses of a public water supply.

ANALYSES WATER FROM SYSTEM OF RICHMOND WATER WORKS COMPANY

	Cooper Well, No. 536.	East Fork, Whitewater, No. 537.	White Gallery, No. 538.	Reservoir No. 539, S. W. corner.	Reservoir No. 499, N. E. Corner.	Reservoir No. 497, S. W. Corner.	Hill Gallery, No. 540.	Gorman Gal- fery, No. 541.
Ammonia, free	.(054	.0036	.0014	.0048	.0014	.0020	.0014	.0010
Ammonia, albuminoid	.0040	.0142	.0046	.0132	.0076	.0158	.0040	.074
Nitrates	.0050	.0500	1500	.0700	1000	.1200	.1000	0700
Nitrites	.0000	.0015	.00:0	.0015	.0015	.0016	.0000	.0003
Chlorine	.250	.275	.250	.250	.250	.200	.300	275
Iron	.0200	Trace.	Trace.	.0000	.0100	Trace.	.0050	.0000
Hardness	26.60	22.50	24.20	18.100	20.10	20.10	24.10	22.50
Total solids	12.60	34.30	37.30	30.40	37.20	38.50	35,60	32.70
Fixed solids	34.60	26.20	26.60	22.80	25.00	25 00	27 20	25.00
Odor	None.	None.	None.	None.		•	None.	None.
Color	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turbidity	None.	Mark'd	None.	None.	Slight.	None.	None.	None.
Sediment	None.	None.	None.	None.	Ť	None.	None.	None.
B. coli	Absent	Pres'nt	Absent	Absent	Absent	Absent	Absent	Absent
Bacterial count				31			1	
			!	per cc.	. 		l .	
Calcium carbonate	26.42	22.59	24.99				l	·
Magnesium carbonate	11.95	11.35	10.82				l	

^{*} Decided musty. † Very slight.

ROCHESTER.

On October 2, in response to an invitation of the "University Association of Rochester," I visited this place to give my illustrated lecture upon the "Prevention and Cure of Tuberculosis."

I was surprised to be made the honor guest of a dinner by Dr. Shafer, who had invited the physicians of the county to said dinner in his new sanatorium. The occasion was most enjoyable, and the communication with these practitioners of the county was surely beneficial to the public health cause.

In the evening my lecture was delivered in church, that was filled and overflowing. Upon arrival I was unable to get in at the front, and was compelled to enter through a rear door. Mr. Bidder, editor of the Rochester Republican, manipulated the lantern, and among the audience was Senator Stephenson and Mr. Barnhart, editor of the Rochester Sentinel. The superintendent of the schools, the mayor and the president of the Rochester College, with teachers and citizens, were present. A resolution of thanks and approval, also commendation of the work of the State Board of Health was passed.

MUNCIE.

On October 8 I visited Muncic to deliver the usual illustrated lecture upon "Tuberculosis; Its Prevention and Cure," before the meeting of the citizens with the State Charities Association. Attorney-General Miller presided, and State Senators Kimbrough and Hendee, together with prominent citizens, were present in the audience. Gen. Miller, as presiding officer, made an address in which he approved and urged others to help in the work of creating a State health farm for consumptives. My lecture was followed with fifteen minute remarks by Dr. Hugh Cowing, Health Officer of Delaware County, and the same time was given to "The Social Aspect of Tuberculosis," by Mr. Fagg, of Evansville. This meeting was a very great success, and doubtless much good was accomplished.

MUNCIE.

October 10 I visited Muncie to lecture before the Indiana Federation of Women's Clubs. The lecture was entitled "What Can the Women Do to Help On the Public Health Cause?" The exercises were held in the Commercial Club rooms, the same being crowded to overflowing. The lecture called the attention to the fact that almost one thousand mothers in the ages of eighteen to forty died annually of one disease, and this is a preventable

disease; that their sisters, the women of the State, could certainly do a great deal to bring before the people the importance of preventing tuberculosis. Many of the well known methods now practiced in this work were reviewed and detailed, special stress being laid upon the point that "success lay in education." Resolutions of thanks were adopted on account of the lecture, and expressing confidence and approval in the work of the State Board of Health.

DEATHS AND DISEASES DURING THE QUARTER.

Total deaths 8,812. In same quarter last year 8,525. There was more smallpox than in same quarter last year, and fewer deaths, but other infectious diseases show no diminution.

The following table gives the smallpox comparisons:

July, 1905	No. of Cases Reported.		
July, 1805	от	3	. 0
July, 1906	18	1	6
August, 1905	10	0	5
August, 1906	40	0	3
September, 1905	19	0	8
September, 1906	51	2	10

Typhoid fever seems not to have prevailed as extensively as in the corresponding quarter last year, as the table makes plain:

		No. of Cases.	Counties Invaded.	No. of Deaths.
July, August, Septer	mber, 1905	2,167	74	403
July, August, Septer	mber, 1906	1,633	49	254

In September many letters from physicians spoke of the prevalence of mild typhoid fever, and blood tests in the laboratory have given the Widal reaction in instances where the disease was not suspected.

PROSECUTION OF BUTCHERS.

The prosecuting attorney of the Indianapolis district was duly informed of the adulteration of sausages and chopped meats found in the Indianapolis Market. The attorney thereupon began direct prosecution in the Marion County Criminal Court in July, 1906. Fourteen meat dealers were arraigned, their names appearing below in the report of the Chemist. The first case tried was

8-Bd. of Health.

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against Harry Matzke, charged with using sodium sulphite as a preservative and color keeper in Hamburg steak.

The trial attracted much public attention, for the defendants brought expert witnesses from Chicago and other places to testify to the harmlessness of sulphite of soda in food as a preservative. The trial extended over three days, and evidently the jury was not convinced that sodium sulphite was injurious to health, for it stood seven to five for conviction.

Upon consultation with the prosecutors, it was decided that as all the dealers promised not to use preservatives hereafter, that it would be best not to bring the accused to trial, and accordingly the cases were dismissed. Following is the record of the dealers and the articles adulterated.

Food samples collected by H. E. Barnard and Norris Thompson on the East Market in Indianapolis, Indiana, Tuesday, June 19, 1906, with the results of analyses made in the Chemical Division of the Indiana State Laboratory of Hygiene:

Article—Hamburger steak, purchased from A. Stuckmeyer, made by A. Stuckmeyer. Preserved with sodium sulphite, containing .173 per cent. of the same.

Article—Hamburger steak, purchased from F. Filtz, made by F. Filtz. Preserved with sodium sulphite, containing .147 per cent. of the same.

Article—Hamburger steak, purchased from F. W. Hebble, made by F. W. Hebble. Preserved with sodium sulphite, containing .164 per cent. of the same.

Article—Hamburger steak, purchased from William Grund, made by William Grund. Preserved with sodium sulphite, containing .429 per cent. of the same.

Article—Hamburger steak, purchased from Sam Davis, made by Sam Davis. Preserved with borax, amount not determined.

Article—Hamburger steak, purchased from Sam Davis, made by Sam Davis. Preserved with sodium sulphite, containing .226 per cent. of the same

Article—Hamburger steak, purchased from Steinmetz Bros., made by Steinmetz Bros. Preserved with sodium sulphite, containing .482 per cent. of the same.

Article—Hamburger steak, purchased from Harry Matzke, made by Harry Matzke. Preserved with sodium sulphite, containing .260 per cent. of the same.

Article—Hamburger steak, purchased from Thos. Dietz, made by Thos. Dietz. Preserved with sodium sulphite, containing .101 per cent. of the same.

Article—Sausage, purchased from J. Deschler, made by J. Deschler. Preserved with sodium sulphite, containing .121 per cent. of the same.

Article—Sausage, purchased from Hilgemeier & Bro., made by Hilgemeier & Bro. Preserved with sodium sulphite, containing .106 per cent. of the same.

Article—Sausage, purchased from Steinmetz Bros., made by Steinmetz Bros. Preserved with sodium sulphite, containing .295 per cent. of the same.

Article—Sausage, purchased from Harry Matzke, made by Harry Matzke. Preserved with sodium sulphite, containing .090 per cent. of the same.

Article—Bologna, purchased from F. Filtz, made by F. Filtz. Preserved with sodium sulphite, containing .147 per cent. of the same.

Article—Weinerwurst, purchased from F. W. Hebble, made by Albert Worm. Preserved with borax, amount not named.

Article—Weinerwurst, purchased from Sindlinger Fresh Meat and Provision Co., made by the Sindlinger Fresh Meat and Provision Co. Preserved with sodium sulphite, containing .025 per cent. of the same.

Article—Veal loaf, purchased from Harry Matzke, made by Harry Matzke. Preserved with sodium sulphite, containing .135 per cent. of the same.

Food samples collected by H. E. Bishop and Philip Brodus on the East Market in Indianapolis, Indiana, on Tuesday, June 19, 1906, with the results of analyses as made in the Chemical Division of the Indiana State Laboratory of Hygiene:

Article—Hamburger steak, purchased from Chas. Mock, made by Chas. Mock. Preserved with sodium sulphite, containing .131 per cent. of the same.

Article—Hamburger steak, purchased from W. H. Heckman, made by W. H. Heckman. Preserved with sodium sulphite, containing .501 per cent. of the same.

Article—Hamburger steak, purchased from Fred Wuster, made by Fred Wuster. Preserved with sodium sulphite, containing .026 per cent. of the same.

Article—Hamburger steak, purchased from Geo. Woessner, made by Geo. Woessner. Preserved with sodium sulphite, containing .170 per cent. of the same.

Article—Hamburger steak, purchased from Thos. Castor, made by Thos. Castor. Preserved with sodium sulphite, containing .144 per cent. of the same.

Article—Hamburger steak, purchased from A. L. Heckman, made by A. L. Heckman. Preserved with sodium sulphite, containing .014 per cent of the same

Article—Hamburger steak, purchased from E. F. Overman, made by E. F. Overman. Preserved with sodium sulphite, containing .030 per cent. of the same.

Article—Hamburger steak, purchased from Henry Coleman, made by Henry Coleman. Preserved with sodium sulphite, containing .319 per cent. of the same.

Article—Hamburger steak, purchased from J. G. Schilsa, made by J. G. Schilsa. Preserved with borax, amount not determined; preserved with sodium sulphite, containing .015 per cent. of the same.

Article—Hamburger steak, purchased from Joe Cook, made by Joe Cook. Preserved with sodium sulphite, containing .298 per cent. of the same.

Article—Sausage, purchased from H. W. Heckman, made by H. W. Heckman. Preserved with sodium sulphite, containing .160 per cent. of the same.

Article—Sausage, purchased from Geo. Woessner, made by Geo. Woessner. Preserved with sodium sulphite, containing .258 per cent. of the same.

Article—Sausage. purchased from Chas. Wecksler, made by Chas. Wecksler. Preserved with sodium sulphite, containing .188 per cent. of the same.

Article—Sausage, purchased from Meier-Meuser Packing Company. made by Meier-Meuser Packing Company. Preserved with sodium sulphite, containing .063 per cent. of the same.

Article—Sausage, purchased from Meier-Meuser Packing Company, made by Meier-Meuser Packing Company. Preserved with sodium sulphite, containing .045 per cent. of the same.

Article—Veal loaf, purchased from Joe Cook, made by Joe Cook. Preserved with sodium sulphite, containing .279 per cent. of the same.

Article—Frankfurter, purchased from Meier-Meuser Packing Company, made by Meier-Meuser Packing Company. Preserved with sodium sulphite, containing .050 per cent. of the same.

COLLECTED JUNE 23, 1906.

Article—Hamburger steak, purchased from L. Nageleison, made by L. Nageleison. Preserved with sodium sulphite, containing .141 per cent. of the same.

Article—Sausage, purchased from L. Nageleison, made by L. Nageleison. Preserved with sodium sulphite, containing .240 per cent. of the same.

Article—Hamburger, purchased from Henry Coleman, made by Henry Coleman. Preserved with sodium sulphite, containing .054 per cent of the same.

Article—Sausage, purchased from Henry Coleman, made by Henry Coleman. Preserved with sodium sulphite, containing .076 per cent. of the same.

Article—Hamburger, purchased from Jos. Parent, made by Jos. Parent. Preserved with sodium sulphite, containing .083 per cent. of the same.

Article—Hamburger, purchased from Steinmetz Bros., made by Steinmetz Bros. Preserved with sodium sulphite, containing .068 per cent. of the same.

Article—Sausage, purchased from H. Matzke, made by H. Matzke. Preserved with sodium sulphite, containing .214 per cent. of the same.

Article—Veal loaf, purchased from H. Matzke, made by H. Matzke. Preserved with sodium sulphite, containing .234 per cent. of the same.

Article—Hamburger, purchased from H. Matzke, made by H. Matzke. Preserved with sodium sulphite, containing .194 per cent. of the same.

Article—Hamburger, purchased from Jos. Fischer, made by Jos. Fischer. Preserved with sodium sulphite, containing .039 per cent. of the same.

Article—Hamburger, purchased from Chas. Cherdon, made by Chas. Cherdon. Preserved with sodium sulphite, containing .201 per cent. of the same.

Article—Sausage, purchased from Chas. Cherdon, made by Chas. Cherdon. Preserved with sodium sulphite, containing .075 per cent. of the same.

Article—Hamburger, purchased from William Grund, made by William Grund. Preserved with sodium sulphite, containing .430 per cent. of the same.

Article—Sausage, purchased from Meier-Meuser Packing Company, made by Meier-Meuser Packing Company. Preserved with sodium sulphite, containing .040 per cent. of the same.

Article—Hamburger, purchased from Sindlinger Fresh Meat and Provision Company, made by Sindlinger Fresh Meat and Provision Company. Preserved with sodium sulphite, containing .402 per cent. of the same.

Article—Sausage, purchased from Sindlinger Fresh Meat and Provision Company, made by Sindlinger Fresh Meat and Provision Company. Preserved with sodium sulphite, containing 312 per cent. of the same.

INSPECTION OF SLAUGHTER HOUSES.

In July Dr. Davis directed that an inspection of slaughter-houses in the State be made. Accordingly a blank was prepared and supplies of the same sent to all city and town health officers. Of the 390 officers of this class, 351 promptly replied by making surveys of the slaughter-houses furnishing meats in their jurisdictions. Upon review of the records it appears that of 460 slaughter-houses inspected 77 per cent. were exceedingly unsanitary, 16 per cent. passable, and only 7 per cent. in good condition. Some of the terms used in describing the conditions were: "revolting," "horrible stench," "rotting blood and entrails," "indescribably awful," "sickening."

In August letters were sent to the authorities of cities and towns where unsanitary slaughter-houses were reported, calling attention to the necessity of correction. It was recommended that an ordinance be passed excluding meats from any slaughter-house which was not sanitary according to the definition laid down in said ordinance. The ordinance read as follows:

An Ordinance Regulating the Meat Supply, Prescribing the Sanitary Conditions of Meat Shops, Butcher Shops, Slaughter Houses, Fish Markets, and Public Eating Houses; Prescribing How Meats and Carcasses of Animals Intended for Human Food Shall Be Handled, Empowering Officers for the Enforcement Thereof, and Repealing All Ordinances in Conflict Therewith.

Section 1. Be it ordained by the Mayor and Council of the City of -, That it shall be unlawful, within the corporation of the -, to sell, barter or give away the flesh of any City of animal intended for human food, which animal has not been slaughtered and the carcass prepared and kept and handled according to the regulations given in this section; and, the carcass of any animal offered for sale for human food within the corporation of the City of which has been prepared otherwise than according to said regulations, is hereby declared to be unclean and is condemned as unfit for human food and it shall be the duty of the City Police, and of the City Health Officer and his Deputies, and the power is hereby given to said officers to summarily seize and drench with kerosene oil any animal carcass or parts of a carcass which they may discover within the corporation of said City, when to their knowledge the carcass or parts of a carcass have not been slaughtered, prepared and handled according to said regulations, and, any person convicted of selling such carcass or parts of a carcass shall be fined in any sum not less than twenty-five nor more than one hundred dollars.

REGULATIONS.

- (1) The animal shall be absolutely healthy and sound.
- (2) All slaughter houses or abattoirs in which slaughtering is done shall have water-tight, hardwood, asphalt or cement floors, be well lighted, thoroughly ventilated and drained, supplied with an abundance of pure water, windows and doors provided with screens, ceilings, side walls, posts, pillars, partitions, etc., shall be frequently whitewashed or painted, or, when this is impracticable, they shall, when necessary be washed, scraped or otherwise rendered sanitary. When floors or other parts of slaughter houses, abattoirs or butcher shops, as tables, racks, trucks, trays, counters, refrigerators, meat blocks, etc., or other parts of the equipment, are so old or in such a condition that they can not be readily made clean and sanitary, they shall be removed and replaced or otherwise put in a condition approved by the City Health Officer. And, all equipment shall be kept clean and in a sanitary condition at all times.
- (3) All slaughter houses or abattoirs shall be provided with tanking apparatus for tanking and making all offal into fertilizer, which apparatus shall be in rooms separate from the killing rooms, but said tanking apparatus is not required if all offal is buried, cremated, or hauled away for tanking elsewhere. Said slaughter houses or abattoirs shall also be provided with ample cold storage facilities and all carcasses shall, as soon as properly dressed, be placed in cold storage until taken away, or said carcasses may be immediately removed elsewhere to cold storage. Said slaughter houses or abattoirs shall also be provided with proper facilities for rendering lard and tallow, and said facilities shall be in a room devoted excusively to said purpose.

- (4) All employes of said slaughter house, abattoir or butcher shop shall be clean in person, and, when at work shall wear aprons or smocks made of a material that is readily cleansed and kept sanitary, and the same shall be cleaned daily, if used; and spitting upon the floor or urinating thereon or other befoulment is absolutely forbidden.
- (5) Said slaughter houses, abattoirs and butcher shops shall be provided with proper facilities for washing hands and also with proper water closet facilities, which shall at all times be kept clean.
- (6) Swine shall not be fed on offal at the said slaughter houses, abattoirs and butcher shops, and the surroundings shall be kept clean at all times. The carcasses of swine fed upon offal are hereby declared to be unclean and are condemned and if offered for sale or are given away and are discovered within the corporation of the City of _______, the same shall be seized and drenched with kerosene oil, as heretofore set forth and commanded.

All carcasses and parts of carcasses intended for human food, during transportation from the slaughter houses or abattoirs, shall be carefully covered with canvas or white cloth so as to exclude all dust, dirt and flies or other insects, and such canvass or cloth covering shall be kept clean by frequent washings.

- Sec. 2. All butcher shops, meat markets and fish markets within the corporation of the City of ——————————————————————, shall, from the first day of May until the first day of November, be provided with self-closing wire screens to all doors and windows, and said screens shall be close fitting and kept in good repair. Said shops and markets shall at all times be kept clean and free from all foreign and noxious odors, and all blocks and tools used in said places shall be kept clean and free from taints. All meats and fish intended for human food shall be so kept and handled as to not allow dust from the streets to settle thereon.
- Sec. 3. Every hotel, restaurant, inn, tavern, boarding house and public eating house within the corporate limits of the City of shall be kept clean and free from all offensive or unwholesome substances. Every such hotel, restaurant, inn, tavern, boarding house and public eating house shall, from the first day of May until the first day of October of each and every year, be provided with self-closing wire screens to all doors, windows and other outside openings, and all such screens shall be close fitting and kept in good repair so as to exclude flies and other insects. The kitchen connected with any such place shall be kept clean, well ventilated and well lighted and in a sanitary condition. The tables,

table linen, dishes, cooking utensils and all other articles used in and about such place shall be kept thoroughly cleansed and free from all taints and foreign odors. All persons employed in or about any such place shall keep themselves and their clothing clean. All parings, refuse, vegetables, fruits, meats and other waste matter, together with all slops, shall, within a reasonable time, be promptly removed from within such hotel, restaurant, inn, tavern, boarding house or public eating house, and deposited in the proper receptacle outside the building occupied by such establishment. All cellars and other places used by any such establishments as places for storage for fruits, vegetables, meats or other articles intended for human food shall be thoroughly disinfected whenever required by the Board of Health of said City, and shall be kept clean and free from all decayed matter of every description; and every such cellar or place of storage shall be so constructed as to exclude rats, mice and other vermin. All such hotels, restaurants, inns, taverns, boarding houses and public eating houses shall be subject to inspection by the Board of Health of said City at any and all times during business hours, and it is hereby made the duty of the members of said Board and of each of them, to make frequent inspections of all such places and to promptly enforce the provisions of this ordinance.

Sec. 4. It shall be unlawful for the proprietor or manager of any hotel, restaurant, inn. tavern, boarding house or public eating house within the corporate limits of the City of ————, either in person or by or through any employe, to serve to any customer or patron any watered milk, or any milk which has been "skimmed," or from which any of the cream has been taken before the milk is so served, unless there shall be posted in a conspicuous place in such public eating house a card stating in the English language that the milk served in such place is skimmed milk. And it shall be unlawful to place any preservative in any milk served to any customer or patron of any such place. All milk and butter intended to be served to customers and patrons of any such hotel, restaurant, inn, tayern, boarding house or public eating house shall be stored in some clean wholesome receptacle, separate and apart from all meats, fish, fruits, vegetables, and where it will not come in contact with the odors arising from the kitchen, or other odors of an injurious nature. The proprietor or manager of every such hotel, restaurant, inn, tavern, boarding house, or public eating house, shall, upon demand, deliver up to the Food Inspector of the City of -------, samples of the milk served to customers or patrons of such place, and it is hereby made the duty of said Inspector to make analyses of such milk and to file with the Common Council, once each month, a written report of the analyses.

Sec. 5. Any person, persons, company or corporation violating any of the provisions of this ordinance shall, upon conviction thereof, be fined, except as otherwise herein provided, for each offense, in any sum not less than one (\$1.00) dollar nor more than fifty (\$50.00) dollars, and each day's violation shall be deemed a separate offense.

Sec. 6. This ordinance shall take effect and be in force from and after its passage and publication once each week for two consecutive weeks in the — — — — a daily newspaper printed and published in said City of — — — — , Indiana.

Very few replies to our "ordinance letter" were received, but it has been learned that several cities and towns passed the law either entire or modified. Among these places are Newcastle, Monticello, Auburn, Warsaw, Marion, Logansport and Sullivan.

THE SECOND ANNUAL MEETING OF THE NATIONAL ASSOCIA-TION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS.

Washington, D. C., May 16-18, 1906, Reported by Geo. T. McCoy, M. D., Member of the Indiana State Board of Health, Columbus, Indiana.

To the President and the Members of the Indiana State Board of Health:

Gentlemen—As your representative I attended the second annual meeting of "The National Association for the Study and Prevention of Tuberculosis," which convened in Washington, D. C., May 16, 1906.

The first meeting was held in conjunction with the Association of American Physicians, and was addressed by Dr. Simon Flexner, of New York, on the subject of "Immunity in Tuberculosis." The meeting was presided over by Dr. Frank Billings, of Chicago. There were 500 delegates present at this first meeting, showing the interest the public is taking in the crusade against tuberculosis. Dr. Edward L. Trudeau, of Saranac Lake, New York, also addressed the meeting, detailing some of his results in preventive inoculation among animals. Dr. Trudeau was encouraged from his success to predict that the same results would ultimately be accomplished in treating human beings.

The general attendance of the meetings was something less than the first meeting, in 1905, but the character of the papers presented was beyond the standard then obtained.

The scientific work this year was grouped in five sections, two new ones (surgery and tuberculosis in children) having been added.

Many important and timely subjects were discussed. "Tuberculosis Nostrums" was the title of a characteristic paper by Samuel Hopkins Adams, of New York. He finds cause for the encouragement in the fact that the whole matter of nostrum control is under adjustment. Patent medicine bills have been agitated in many State Legislatures and the press of the country is taking a more commendable stand upon the subject.

"Three Cases of Placental Tuberculosis," illustrated by lantern slides, was the subject of a very interesting paper by Dr. Alfred Scott Warthin, of Ann Arbor. In the discussion Dr. W. H. Welch, of Johns Hopkins University, stated that the evidence is becoming stronger and stronger that conveyance from mother to fetus is at least not so very extraordinary, and is probably far more frequent than is commonly supposed. Twenty cases of placental tuberculosis have been reported. Dr. Welch regards the question of placental lesions as a subject of really fundamental importance in the etiology of tuberculosis. That tuberculosis in the new born does not more frequently develop has been explained in two ways; first, that the bacilli get in late, and hence there is no time for tuber-

culosis to develop; and, second, that the fetus is relatively insusceptible. The fetal blood may be filled with tubercle bacilli, and no localized lesion be developed. There is abundant evidence to show that the fetus may harbor tubercle bacilli for weeks without the development of lesions.

"The Serum Diagnosis of Tuberculosis" was presented by Drs. Kinghorn and Twitchell, of Saranac Lake The results of their experiments seem to show that it is not a specific sign of the presence of tuberculosis, and that it is of no value in the early diagnosis of the disease. ("The Serum Prognosis of Tuberculosis" is attracting much attention, and is likely to become a valuable ald to the clinician.) The same may be said of the Opsonic Index of Wright and Douglas, especially in its relation to the treatment of tuberculin.

"The Therapeutic Use of Tuberculin Combined with Sanatorium Treatment of Tuberculosis" was the subject of an exhaustive report by Dr. Trudeau, in which he presented a summary of the impressions gained from its use at Saranac Lake since 1890. Tuberculin is a powerful agent and must be used with care. Fever reaction is not necessary, and every effort should be made to avoid its production; hence very minute doses are to be used in the beginning. The danger from tuberculin lies wholly in its faulty administration. Six months are almost always necessary for the treatment, and in many cases a year would be better. The reaction of the patient is of more value in determining the dosage than is the Opsonic Index. As a result of his experience Dr. Trudeau still holds to the opinion formed years ago, namely, that tuberculin aids in the sanatorium treatment of tuberculesis, but he regrets that there is no standard strength for the preparation, and that there is so little known positively about the action and the strength of the dose that would give the best results. Therefore its use must be left largely to the skill and judgment of the physician in each individual case.

One of the most important sessions was that devoted to "Tuberculosis in Children." A number of valuable papers were presented in this section, and the discussions were the most spirited of any during the entire meeting. In the absence of Dr. A. Jacobi, Dr. David Bovaird, of New York, presented the subject of "Sources of, and Portal Entry of, the Infectious Agents in Tuberculosis of Infants and Young Children." Bovaird has had a large experience in autopsies on children, and was well qualified to speak of the sources of infection as displayed in postmortem findings. He said that while there were records of cases of local infection, tuberculosis of the skin, bones, the eye, etc., where there was no doubt that the infection came from contact of tuberculosis material with the part affected, they are so rare as to form an almost negligible quantity in the general consideration of the subject. The results of autopsies showed that infection came almost solely from two sources, the inhalation of the tubercle bacilli, or its ingestion with food. In this connection it is remarkable how few cases of intestinal tuberculosis are found even when the lungs are seriously affected, and where the patient must have been swallowing millions of tubercle bacilli every day. Reasoning from this standpoint, the drinking of milk from tuberculosis cows is not attended with very grave dangers, but the apparent protection of the intestinal glands in those having the disease in the lungs, may not extend

to the non-tubercular. He did not advocate any relaxation in the stringency of milk laws on this account. Tuberculosis of the intestinal tract is much more common among children in English, German and French hospitals than in American hospitals.

"Protection of Infants and Young Children from Tuberculosis" was the subject of a paper presented by Dr. John Lovett Morse, of Boston. This is an exceedingly difficult problem, especially in the crowded environment of tenements, and after such diseases as measles, whooping cough and influenzs. The danger of infection of the children is greatest on account of their association with tuberculous parents. The parent should not be allowed to keep and handle the child; they should be separated at the carliest possible moment if the child is to escape infection. The establishment of as many playgrounds and places of outdoor exercise and entertainment as is possible should be urged upon those in authority, the results largely depending upon the amount of money that the public is willing to spend in its campaign of education and in making provision by means of sanatoria and other institutions for the care of less fortunate individuals.

Surgeon General Wyman addressed the Association in its last session on the methods employed by the Government for the prevention of the spread of consumption among Government employes. General Wyman related that in accordance with the resolution passed by the Association last year, the President had appointed boards of inquiry to determine the best method to be followed in the sanitation of public buildings, and the conduct of the employes in relation to tuberculosis. Under the terms of the executive order the public buildings under the War and Navy Departments will be inspected by boards of medical officers appointed by the respective Surgeons General of these two departments. public buildings will be inspected by boards appointed by the Surgeon General of the Public Health and Marine Hospital Service. The reports of these boards will be made under two distinct heads: first, unsanitary conditions immediately remediable; and, second, unsanitary conditions requiring structural changes. A start has been made in the City of Washington, and with the experience gained there the inspections will be gradually extended throughout the United States. The organization of this great work, as outlined above, has been most carefully considered, and it is confidently expected that great good will result.

In the absence of Dr. Herman Biggs, President of the Association, the annual address was delivered by Dr. Lawrence F. Flick, of Philadelphia, Vice-President. Dr. Flick spoke of the good work accomplished by the Association during the past year, prominent among which is the establishment of tuberculosis exhibition meetings throughout the country, and the bringing to this country the "International Tuberculosis Association" in 1908. The local exhibitions held in a number of cities of the country during the past winter accomplished a great deal of good in educating the people. The program is to be extended to other cities and towns. The advisability of establishing permanent exhibitions in the large cities is to be considered. For the Congress he urges the raising of a fund of \$100,000 for expenses, and the early opening in Washington City of an office for arranging the details of the meeting. Dr. Flick asserted that

the strength of the National Association lay in the fact that its ambition to eradicate consumption could be gratified. He advocated the establishment of hospitals, sanatoria, convalescent farms, public dispensaries, where the poor could be served, and the scientific care of the afflicted in their homes. He with others criticises the medical schools for turning out graduates unacquainted with the best methods of diagnosis, and the best means of combating the disease. To create a more widespread interest in the subject of the prevention of tuberculosis, he recommended the establishment of a lecture bureau, providing speakers to visit every part of the country, and disseminate knowledge of how to combat the disease successfully.

The emblem of membership of the National, State and Local Tuberculosis Associations was declared to be the double red cross.

It would be impossible in a report of this kind to more than mention the many excellent papers presented, and the earnest discussions following the reading of each paper. One must have been there to appreciate the great work accomplished at this meeting. The attendance at each session was remarkably good, and the best of attention was given to the reading and discussion of papers. The coming and going of members during the reading of papers, that is often so annoying at large meetings of this kind, was not noticed.

Besides the pleasure of listening to the reading and discussion of papers, the mingling with the delegates and listening to the words of wisdom from the lips of the great men in the profession in quiet conversation was a pleasure that one can scarcely forget. The whole meeting seemed to b pervaded with an atmosphere of earnestness and deep learning.

It was with much chagrin that your representative noticed the marks of evident surprise upon the countenances of inquiring members when the statement had to be made that the great State of Indiana, one of the foremost States of the Union, had no plan to care for her unfortunate consumptives.

Ordered, That Secretary's report be spread of record.

PETERSBURG SCHOOLHOUSE.

After full consideration of the report of sanitary survey of the Petersburg Schoolhouse as presented in the Secretary's report, the following proclamation was adopted:

PROCLAMATION.

Whereas, It is satisfactorily proven to the State Board of Health that the schoolhouse at Petersburg, Pike County, Indiana, is unsafe and very unsanitary; therefore it is

Ordered, That said schoolhouse is condemned as unfit for school use and purposes, the said condemnation to be in effect on and after June 1, 1907, and all school authorities and all teachers are commanded under pain of prosecution not to use said schoolhouse for school purposes on or

after said date, June 1, 1907. Unanimously passed this 12th day of October, 1906, in regular session of the Indiana State Board of Health, all members being present.

NEW BRITTON SCHOOLHOUSE.

After full consideration of the report of sanitary survey of the Britton Schoolhouse, as appears in the Secretary's report, the following proclamation was adopted:

PROCLAMATION.

Whereas, It is satisfactorily proven to the State Board of Health that the schoolhouse known as the New Britton Schoolhouse, situated in Hamilton County, Delaware Township, Indiana, is old, dilapidated and unsanitary; therefore it is

Ordered, That said schoolhouse is condemned as unfit for school uses and purposes, and shall not be used for school purposes after this date, October 12, 1906. And any school authority, teacher or other person or persons who shall violate this condemnation order shall be prosecuted as in the statutes provided. Any person who tears down, mutilates, distigures or destroys this card without due authority from the State Board of Health shall be prosecuted.

Passed this day, October 12, 1906, in regular session of the Indiana State Board of Health, all members present.

Ordered, That the Secretary subscribe for the clippings as furnished by the United Press Association of Indianapolis at the rate of \$5 per month until January 1, 1907.

DR. T. VICTOR KEENE.

The President read the following letter:

Dr. T. Henry Davis:

Dear Sir—I hereby tender my resignation as Superintendent of the Laboratory of Hygiene, to take effect November 30, 1906, as it is my intention to re-enter the practice of medicine.

Very respectfully,

T. VICTOR KEENE. September 24, 1906. After due consideration of Dr. Keene's resignation the following resolution was adopted:

Resolved, That the resignation of Dr. T. Victor Keene, as Superintendent of Laboratory of Hygiene, to take effect November 30, 1906, be accepted, and in accepting said resignation the Board wishes to convey to Dr. Keene its sincere thanks for the very competent way in which he has conducted the work of the Laboratory and that its best wishes for his success go with him in his future work.

The following letter from Lederle Antitoxin Laboratories was read:

October 5, 1906.

State Board of Health, Indianapolis, Ind.:

Gentlemen—We beg to submit the following proposition for supplying the local Boards of Health throughout the State of Indiana with diphtheria antitoxin for the free treatment of those in the State too poor to otherwise procure antitoxin. This is the same plan that is now in force in Ohio and which is working out very satisfactorily there.

We are sending you, under separate cover, by mail, a package of antitoxin as we prepare it for the Ohio State Board of Health. You will notice we have a special label for them. We enclose herewith a clinical report blank, one of which is enclosed in each package of antitoxin shipped to the Ohio State Board of Health. We propose to prepare the packages for your State Board in the same manner as we prepare those for Ohio. We will ship you a stock of the various doses required, 1,000, 2,000, 3,000, 4,000 and 5,000 units, together with memorandum sheets in triplicate similar to the set enclosed marked number one. Upon shipment of a lot of goods to any Board of Health in your State one of these blanks properly filled out should be mailed to us, another to the Board of Health, and the third copy kept for your own file. Upon receipt of this memorandum we will forward bill for the goods from this office and take care of the account in future.

It is not customary with us at the figures we quote on these goods to exchange them, but in order to promote the use of antitoxin we will permit the return to you of unused antitoxin by your local boards within a period of thirty days from its receipt. This gives the local board ample opportunity to know whether there is likelihood of the remedy being required and at the same time permits of the antitoxin being used in another locality, as during the period named its efficiency has not been affected. We enclose blanks, marked set number two. Upon receipt of any return goods from a local Board of Health you will have a set of these blanks filled out, mailing one to this office, keep one for your file, and the third send to the local Board of Health. Upon receipt of this blank we will charge your stock account with the amount of goods you have reported received from the local Board and will credit the account of the local Board with the necessary amount.

From time to time you may order from us such stock as may be required to keep your own in good condition, making a point, however, of always shipping your oldest stock first. At the end of each month a stock statement will be rendered you from this office. This will be made up of all the stock shipped you during the month, plus such as you have received from local Boards less such as our memorandums show has been shipped from your office to Boards of Health. The balance shown on this statement should agree with your stock on hand at the end of the month. This you can have checked up and return to us with your O. K.

We will supply this antitoxin to the Boards of Health throughout your State at the following prices:

1,000	units\$0	75
2,000	units 1	25
3,000	units 1	75
4,000	units 2	25
5.000	units 2	75

We will pay any transportation charges on these goods to your office and also such expenses as you may have in shipping the goods to local Boards of Health. Each week or month, as you prefer, a bill of expense for transportation charges may be furnished us.

We enclose a copy of a circular which Dr. Probst used in instructing the Boards of Health in his State concerning the arrangement he had made with us. You may find some suggestions in this that you will care to make use of.

We believe that we have covered fully the plan as is at present in operation in Ohio, and should you have any suggestions which you feel will promote its better working out in your State, we shall be glad to entertain them. We believe we can have this plan in operation within a week or ten days after receiving a favorable report from your Board.

Very truly yours,
LEDERLE ANTITOXIN LABORATORIES.
By L. D. Bell, Secretary.

After consideration the Lederle letter was laid upon the table for the present.

FIRST

ANNUAL REPORT

OF THE

State Laboratory of Hygiene

Year Ending October 31, 1906.

There are two Departments:

Department of Bacteriology and Pathology.

Department of Chemistry.

9-Bd. of Health.

(129)

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REPORT

OF

The Chemical Department

LABORATORY OF HYGIENE

Year Ending October 31, 1906

H. E. BARNARD, B. Sc., Chief of Department of Chemistry. H. E. BISHOP, B. Sc.,
First Assistant Chemist.

NORRIS THOMPSON,

Second Assistant Chemist.

FIRST ANNUAL REPORT OF THE WORK OF THE CHEMICAL DEPARTMENT OF THE LABORATORY OF HYGIENE.

By H. E. BARNARD, B. Sc.

At the opening of the chemical department of the laboratory several fields for investigation were waiting, each one of which deserved immediate attention. The public and private water supplies of the State, hitherto unguarded and uncontrolled by other than local watchfulness, were in great need of inspection, and the food and drug laws, which had been on the statute books in one form and another for many years, and which had never been put into operation because of lack of facilities for the necessary laboratory work, were waiting enforcement. The question of pure water is primarily one of health, that of pure foods and drugs is concerned both with disease prevention and the suppression of economic fraud. The health and wealth of citizens are each equally to be safeguarded.

The chemical laboratories were, therefore, equipped for both lines of work and separate rooms fitted up, one for water and one for food and drug analysis. This division was made necessary because of the impossibility of making water analyses in a laboratory used for other work. The division of effort thus outlined has operated admirably in practice. The laboratories, though devoted to entirely different uses, are so arranged that work can be carried on in each simultaneously by the same corps of chemists.

During the year Harry E. Bishop, B. Sc., Assistant Chemist, has had charge of most of the work of the water laboratory and of the department in the absence of the chemist. He is a skilful and resourceful analyst and has filled the position with entire satisfaction. Since the first of January Norris Thompson has been on the analytical force and has done much valuable work in connection with food and drug analyses. During the summer months Jack Hinman assisted in the food laboratory, and although he was drawing no salary for his services he did much work that is to be

commended. To Mrs. E. T. Coney, clerk of the department, is due much credit for the conscientious and thorough manner in which she has performed the work of the office.

But little attempt has been made to enforce the food law through the courts. In November, 1905, several cases involving the sale of adulterated milk were presented to the Grand Jury of Clark County, but since it was impossible to prove the knowing violation of the law necessary under the present statute no indictments were returned. Milk cases were also brought in a justice's court in Terre Haute, but it was impossible to convict the defendants for similar reasons. In June of this year a number of cases were brought against dealers in meats in the city of Indianapolis who were selling products preserved with antiseptics in violation of the food laws. One case only came to trial, that of the State vs. Matzke, before the Criminal Court of Marion County. The case involved the necessity of the State proving the drug employed to be poisonous, a fact well established by elaborate investigations of the United States Department of Agriculture and physiological experts, but not easily shown except by expensive expert testimony. The jury was unable to agree as to the verdict to be rendered and no further steps have been taken to dispose of the case.

The experience gained in these few cases is sufficient to show the need of some changes in the present food law that will make it possible to punish violations by fine and imprisonment whenever such measures seem necessary to secure a proper observance of the law.

In the following report is summarized the result of a year's work. Special studies have been made of the public water supplies, private supplies, cistern and deep well waters in the water laboratory, and of many cases of foods and drugs in the food and drug laboratory.

THE PUBLIC WATER SUPPLY.

When this country was entirely agricultural, and the population widely scattered, the family water supply was of necessity the farmhouse well; but as the crossroads settlement grew to a village and with the passing years attained a city's attributes, the well became

unsafe and the supply inadequate. Water became more and more a necessity; the few gallons that sufficed for the daily needs of the early settler would no longer satisfy the householder, who must have running water in kitchen and bathroom, sewer connections and lawn sprinklers. So public water supplies were sought and built either by private capital or public funds. Many cities and towns built their own water systems and sold the service at cost to the consumer; many other supplies were constructed by companies or corporations looking for profitable investments. The service has extended until at present there are but few communities that do not have a water supply. Fire protection alone makes an adequate supply a necessity even where the water is not employed for domestic uses. With the rapid development of public water systems, there has not always been manifested the wisdom in a selection of a source of supply that is desirable. To the early settler, water was water, a fair conclusion where there could be no pollution; so it was that the first corporations building reservoirs and sinking wells consulted primarily the cost of installation and but secondarily the character of the supply. That policy did provide water-works, but as the years have passed by, one system after another has been abandoned at heavy loss and new ones constructed.

The water supply, furnishing as it does water for drinking and domestic purposes, becomes an important factor in determining the health of a community. Indeed it is the most important of all the agents which administer to healthful Certain diseases are largely water borne, particularly diseases of the intestinal tract, such as cholera and typhoid fever, and the quality of water supplied to perhaps 90 per cent. of a town's population, is of first importance. This is realized more and more and the consumers today refuse to drink water that a few years ago was used without the slightest fear. Whenever typhoid fever is reported in a community, the water supply, whether it be from a well or the public main, should at once be brought under suspicion. And more than that, the water supply should be investigated before fever breaks out. It is not enough to lock the stable door after the horse is stolen, though that practice is the one usually followed. Water supplies should be constantly subjected to rigid inspection. Their source should be of known purity,

and every condition surrounding the distribution of the water such that contamination is impossible. It is the province of the health boards to control the water supply of cities and towns. Their powers in this direction are almost unlimited. The so-called police powers of common law which give them the authority to protect the public health, authorize every action that may tend to prevent disease.

A prominent feature of the work of the Laboratory of Hygiene is to assist local health officers in determining the character of the local water supplies. But before satisfactory and reliable assistance can be given, a thorough knowledge of conditions is necessary, and, therefore, one of the first steps in our work was to obtain a full report of the various public supplies of the State. In order to obtain this information the following blank was sent to every health officer and superintendent of water companies:

PUBLIC WATER SUPPLY.

Town or City
Does your town own or operate a public water supply?
If so, give corporate name of such
When were the works built and by whom?
Is the source of supply a pond, stream, spring, or well?
•••••••••••••••••••••••
Give approximate area of watershed; wooded or cleared land; and number of inhabitants thereon
Are the shores of the pond frequented by picnic parties, or occupied by summer cottages?
•••••
If from a stream, give approximate volume of water flowing under normal conditions
Does the stream receive any sewage or waste from manufacturing oper-
ations above the intake of the supply?
If so, state approximate amount
If from springs or wells, give depth, quantity of water flowing, character
of soil, subsoil, and underlying strata, etc. Are wells bored, driven or dug?
•••••
•••••••••••••••••••••••••••••••••••••••

Is the water supplied by gravity, or pumped to standpipe or reservoir?
If standpipe, give capacity; if reservoir, give capacity, area and depth
Does the supply ever develop an unpleasant odor or taste?
Has the water ever been analyzed? If so, by whom and when? State percentage of population using public water supply State number of families using the supply described Are there many private wells still in use within the radius reached by the public supply?
(Signature) (Postoffice address) (Date) REMARKS. (Here give any facts or information relating to the subject not incorporated in above answers).

From the records obtained, the following figures concerning the public water supplies of the State of Indiana are compiled. One hundred and forty-one cities and towns are provided with water systems; 84 cities and towns own their own supply; 51 are under the control of private corporations. The ownership of six other small supplies could not be determined. Seventy-five systems are supplied with driven wells; 9 small systems employ dug wells; 7, springs; 3, flowing artesian well's over 1,200 feet deep; 29 supplies are obtained from rivers, of which the Ohio supplies 5 cities, the White River and forks 5, and the Wabash 2. All of these river supplies receive sewage in large quantities, and but three of the systems depend upon filtration to purify the water. It is evident that this unsanitary condition will eventually result in serious epidemics. Ten supplies are from lakes, Lake Michigan furnishing the water for four cities. All of these cities empty their sewage into the lake and occasionally complain that the water supply is polluted. Ninety-three of the supplies are gravity systems, while 41 are operated by direct pressure upon the mains; 56 systems have standpipes and 31 reservoirs as storage basins.

Nine of the supplies are filtered either by the slow sand filtration process or after chemical treatment. Nine of the supplies are used wholly for fire and hydrant purposes and are not used for drinking. Six of the supplies are reported as bad, one as sometimes bad, and one fair. The rest of the supplies, in the opinion of the informers, are of good quality. One thousand, seven hundred and thirty miles of distributing mains are in use; 1,711 miles of these are of cast iron and 19 miles of wood. Eight hundred and ninety-one thousand people use the water from public supplies for drinking purposes, while 1,757,000 people are wholly dependent upon private wells for their water; or two-thirds of the entire population of the State depend upon the private supply, while one-third uses public waters. A reasonable estimate allows one well to every five persons. There are, then, 351,000 wells in use in this State, the majority of which are so located as to be liable to pollution by household and by barnyard sewage.

It is of course impossible for the State Board of Health to examine all these private wells. It can, however, exercise a rigid control over the purity of the 141 public systems and as well, through the aid of local health officers, condemn annually a large number of the polluted private supplies.

Of the 141 supplies of the State which furnish the water for 891,000 inhabitants, or 33.3 per cent. of the population, we have been able to obtain information as to the sanitary character of but 41 systems. It is the desire of the Laboratory to develop eventually a system of inspection that will record at least four times a year the sanitary condition of every public water supply in the State. In no other way can the public health be safely guarded and purity of the water supply be assured.

Three factors determine the value of a water supply: First and of most importance is freedom from disease germs; second, the supply must be so abundant that it will furnish sufficient water to check the most extensive fire; and, third, it must be of a character that adapts it for use in domestic economy, such as for toilet and laundry purposes, and for industrial use in boilers and as wash-water in mechanical operations. The water which most clearly satisfies these requirements is a so-called surface water, water which falls to the ground as rain, and flowing over uninhabited areas, collects in natural basins as lakes or rivers. The

water as it reaches the earth is as pure as it is found in nature. As it flows over the surface of the ground it dissolves mineral matter from the rocks and soil and takes up organic constituents from decayed leaves and grasses. When it reaches a resting place in a natural basin, all suspended particles are gradually precipitated and the chemical action of light and air rapidly oxidizes and destroys the dissolved organic material accumulated in the rush through forests, over meadows, stony pasture lands and cultivated fields.

Surface water supplies are usually soft and palatable, and whenever properly protected against pollution furnish the safest of potable waters. The water supplied New York, Boston and Chicago is of this class.

When surface water reaches a river it flows rapidly away from its origin and is exposed to all forms of pollution. Rivers have wrongly enough been considered the sewers of industrial activities rather than arteries bearing the great necessity of life, and they are continually subject to contamination. They receive the untreated and unpurified sewage of cities, and the offal of manufacture, so that in an unpurified state, river water is no longer to be considered suitable for public supply. When no other supply is obtainable it is possible to so purify a sewage laden stream that it again becomes suitable for consumption. The process of purification removes disease germs as well, and depends upon sedimentation, filtration, nitrification and oxidation of organic matter to accomplish this. Some river waters like the Ohio and Missouri carry large quantities of silt, silica in suspension, that it is with great difficulty removed by filtration. If given time, however, the silt subsides and as it precipitates it carries down with it most of the injurious bacteria, and the water so purified again becomes suitable for use. Other waters are more advantageously treated by allowing them to flow onto beds of sand and gravel through which they slowly percolate. Gross impurities remain on the top of the filter, while organic matter, bacteria, etc., passing slowly over the surface of the grains of sand as a thin film, is subjected to the action of countless millions of so-called nitrifying bacteria and is changed from its organic to an inorganic and harmless state. The slow sand filtration system of purification is employed with much success by many cities of this country. Lawrence, Mass., was one

of the first cities to adopt the system on the heavily polluted Merrimac River water. In 1890, before the installation of the filter, the typhoid death rate was 123 per 100,000; after the filtration system was placed in use there was a rapid decrease in the death rate until in 1903 it was but 33 per 100,000.

The deep well supply is very popular with many cities and water companies. Deep well waters, that is, waters that come from strata lying in or below an impervious layer of stone or clay, in this State the limestone formations, are not liable to be contaminated by sewage and are more easily obtained and distributed than surface waters which have to be brought miles from their source or purified at great expense. Deep well waters are not desirable as public supplies for several reasons. In the first place the supply is always limited. If the watershed is large or if the wells are sunk in a valley which conveys underground waters flowing off an extensive watershed, the supply may be ample. But if the watershed is not large, the supply of water underlying it will be limited, and no number of wells can obtain the necessary amount of water. It is inevitably the case that the deep well system gives out as the demand increases. Deep well waters are usually hard and frequently contain much iron. Hard waters are not desirable for domestic or laundry purposes, and when used for making steam, have to be "broken" or softened before they are suitable for use. The deep well supplies now in use in Indiana are for the most part furnishing a safe water at the present time, and some of the systems are supplied with an abundance of water. But as far as the majority of the systems are concerned, it is inevitable that sooner or later the supplies will prove inadequate.

The composition of the public waters of Indiana, as determined by analyses made during the past year, is illustrated by the following tables:

WATER SUPPLIES

N D I A N A 1906

683	TOTAL	L NUMBER	SUPPLIES	EXAMINED	•		
207	DEE	WELLS					
	720			•			
380	SHAL	LOW WEL	LS				
					ļ		
27	CISTE	RNS					
26	Sprin	22					
	O: :::N	••					
							•
18	STREA	MS			*		
8 P	ONDS					•	
	ONDS						
10	BALLE	RY WELLS		•		•	
			•				
8 M	ISCEL	LANEOUS					
	•						

QUALITY OF SUPPLIES

683	TOTAL	NUMBER	SUPPLIES	EXAMINED
336	GOOD			·
260	BAD			
87	DOUBTE	UL		

WATER SUPPLIES IN INDIANA

PUBLIC SUPPLIES
1906

14S TOTAL NUMBER EXAMINED

57 DEEP WELLS

19 STREAMS

40 SHALLOW WELLS

10 GALLERY WELLS

3. SPRINGS

8 MISCELLANEOUS

PRIVATE SUPPLIES

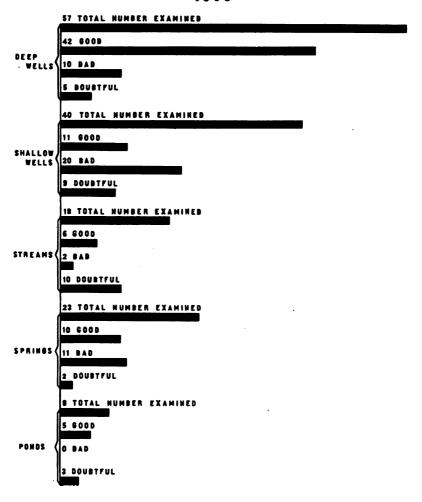
150 DEEP WELLS

342 SHALLOW WELLS

27 CISTERNS

23 SPRINGS

CONDITION OF PUBLIC WATER SUPPLIES IN INDIANA



In all, the water from 146 public supplies has been analyzed, and of this number 74 supplies were of good quality, 43 were bad, and 29 were of such character that they were classed as doubtful. Most of the bad waters were taken from shallow or driven wells located in the public square or by the side of the street where they were exposed to all sorts of pollution. In order to better illustrate this point we have made another classification based on the source of the sample. Of the 57 deep or subsurface waters used as public supplies, 42 were entirely free from pollution, ten were classed as bad, and five were of doubtful quality. Several of the bad and most of the doubtful waters were so classed because of the high content of ammonia, chlorine, and iron present, and not because there was any evidence of pollution by sewage. Certain waters, especially from the coal and gas belt, have a high chlorine and ammonia content, which renders them undesirable for drinking or domestic use, although there is no claim that such waters are capable of producing disease. Of the shallow or surface wells but 11 could be passed as pure, while 20 were undoubtedly bad and 9 were evidently in a transition stage from good to bad. If we class these last wells as bad, a condition they will doubtless reach eventually, we find that but 11 out of the 40 shallow wells used as public supplies were above suspicion. But 6 of the 18 stream supplies were pure; 2 were undoubtedly bad and 10 were receiving sewage either directly or as the runoff from cultivated and inhabited ground. None of the 8 pond supplies were bad, although 3 were of doubtful quality. Of the 23 springs, 10 were good, 11 bad and 8 of doubtful quality. It is not probable that these bad springs were true spring supplies. They were evidently waters draining off inhabited areas and breaking out at some fault a short distance below the surface, rather than deep ground waters.

PRIVATE WATER SUPPLIES.

At least 2,000,000 citizens of Indiana are dependent upon wells for their water supply for drinking and domestic purposes. In country districts no community system is possible and in many small villages the expense of installing a public supply is as yet sufficiently prohibitive to compel the continued use of the well.

In pioneer days the first desideratum for home-making was an

abundant supply of pure water, and a flowing spring was quite as attractive to the early settler as fertile acres. When springs were not found the dug well supplied the family with an abundance of pure wholesome water. Unfortunately the conditions of early days, when pumps were not obtainable, made it advantageous to dig the well as near the kitchen door or barnyard as possible, thus saving the task of carrying water long distances by hand or with the aid of the shoulder yoke. The same wells still supply later generations, but instead of furnishing pure water, they now all too frequently are but pools of filtered sewage, the effluents of the barnyard, kitchen sink or adjacent privy, liable at any time to bring sickness to the user, or an epidemic to the community.

It is usually thought that if a well is thirty feet from a contaminating source it is safe from pollution; that if, perchance, any seepage does take place, the effluents will have been made as pure as water from the skies, in the mysterious laboratory of the earth. Such reasoning has long been proved false. If a well is freely used, so the level of the water is below that of the water in the surrounding earth, inflow will take place for a distance of one hundred feet laterally, and in the direction from which the ground water flows for a much greater distance. Hence, ordinarily a source of filth, in order to contaminate a well, must be within one hundred feet, or, in extreme cases, two hundred feet, except in the direction from which the ground water flows. But this is not the whole truth, for the original source of filth may be much farther removed and have gradually defiled the soil in the direction of the well, until it has extended within its influence. filth has been known to seep through the soil for a distance of two hundred yards and poison wells.

In a small rural village the supply of water may have been of unexceptionable quality for an indefinite time, but as the place grows, population becomes more dense, the ground water is drawn on in excess of the supply, the drainage area of the well is increased and the water becomes less pure, both from this cause and from the increased amount of sewage returned to the soil, which is sure to be saturated with organic matter beyond its power of oxidation, and pollution of the wells is inevitable.

During the past year we have made a large number of analyses of water from private wells. In many cases the samples were not

submitted for analyses until illness, usually typhoid fever, aroused the family, or more frequently the family physician, to question the purity of the supply. The blind faith in the purity of well water, especially when it has been used by several generations of the same family, is one of the chief reasons why typhoid fever so constantly ravages country districts. The honor of the family well is held as inviolate as the honor of the family name, and any hint or suggestion of possible impurity is met with a laugh of scorn. We have heard time and again the statement, "My well water is the best in the county or State," and have found by analysis that it was but little better than raw sewage; clear and cool perhaps, but nevertheless reeking with the putrefactive bacteria of the privy vault and filthy hogpen.

The condition of the private well is best illustrated by graphic representation, and the following charts indicate clearly the results of a year's work and as well hint what will have to be done before the character of the water used by the country householder is as good as that supplied the residents of cities and towns where public water systems are in use.

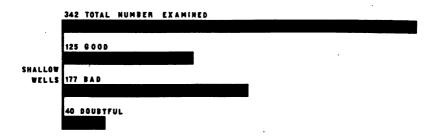
If these charts are summarized we find that 492 private well waters have been analyzed, of which 236 were pure, 202 bad and 54 of doubtful quality. If we class the doubtful waters as bad, since they will eventually reach this condition, we see that 256, or 52 per cent., of the private well supplies are of such quality as to be unsuitable for drinking and domestic use. If this figure holds good throughout the State we can readily see why the typhoid returns from the country districts are always high. Making another classification based on the source of the waters, we find that of 150 deep well waters analyzed but 25 were bad, while 111 were of good quality. The deep well is evidently a satisfactory private supply if it is derived from true second water. Of 342 shallow wells, 177 were undoubtedly bad, 125 were good and 40 were of doubtful quality. It is not surprising that many wells are polluted, because the universal custom of grouping the house, barn and water supply within easy reach of each other has made the well the center of drainage area for all household sewage and farmvard waste. Great numbers of these old wells are still in common use, and, save where analysis has proven the water to be a filtered sewage, of good repute in the community. The impor-10-Bd. of Health.

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CONDITION OF PRIVATE WATER SUPPLIES IN INDIANA

1906







tance of an analysis of these well waters can not be over estimated. In some towns where public sentiment has been aroused, a series of analyses has shown that hardly a single well in the thickly settled village was suitable for use, because of the presence of sewage effluents. Where such conditions exist, and our results convince us that they are by no means uncommon, a water supply brought from some uncontaminated source becomes a public necessity.

THE CHEMICAL ANALYSES OF SOME SO-CALLED CISTERN WATERS.

When suitable ground or surface water is not obtainable the collection and storage of rain water is resorted to. In some parts of the world no other water is used for drinking purposes. This has been the case in the city of New Orleans until continually recurring epidemics of yellow fever spread by mosquitoes bred in cisterns and water tanks forced the introduction of a municipal water supply. Indiana has an abundance of both ground and surface waters, but, since in some cases the water is not suitable for use and more particularly because of the adaptability of rain water to domestic and laundry purposes, cisterns are common in all parts of the State. Cistern water is rain water collected from a flat surface, usually a roof, and stored in vaults, generally underground but sometimes built in cellars. The character of the water is entirely dependent on the condition of the roof which is washed by the rains and the suitability of the storage reservoir. roof of a house, exposed as it is to the dust from the streets, excrement from birds, fallen leaves and mossy growths, is not an attractive nor sanitary place from which to collect drinking water, and the gutters and down pipes should be so arranged that the first water which falls is not allowed to flow into the cistern. After the roof is well cleansed the subsequent rainfall may reach the cistern in a fair degree of purity.

A question of first importance in considering a rain water supply is the material out of which the walls of the storage cistern are to be made. Slate and stone are the most suitable materials but are not often available except for small cisterns. Brick walled cisterns lined with cement are by far the most

common, and though the hardness of the water is somewhat increased by the solubility of the lime salts in the cement, they are easily built and at low cost and if properly constructed, well adapted for the purpose. Tanks of wood make good cisterns provided they are kept full, but if there is fluctuation in the water level, organic development will occur and impart a disagreeable taste and odor to the water. Cement or concrete cisterns are rapidly coming into use and, aside from increasing its hardness, do not injure the quality of the water. Cisterns so constructed are very desirable and are to be preferred above all other kinds where a large volume of water is to be stored. One form of cistern that is frequently built has a partition wall across it making a chamber that is filled with charcoal or other filtering material. When new this construction furnishes a water with a less pronounced "cistern" taste than is obtainable from the ordinary This arrangement is not desirable because the water is simply strained, never purified, and the filter or retaining basin rapidly becomes filled with filth that can not be readily removed. The suitable location of the cistern is of first importance in determining the quality of the water it furnishes. Frequently it is in the back yard, exposed to drainage and seepage from garbage piles, accumulated filth and open privy vaults. During the past year we have analyzed the water from 27 cistern supplies. Of the entire number we found but 13 that could be classed as potable; in all the other cases the cisterns had evidently received water from the surrounding ground as well as from the roof. Several samples, notably numbers 56, 294 and 396 (see p. 149), were nothing but sewage effluents, and were dangerous waters for 1180.

A good cistern water should be soft, free from sediment and vegetable growths, and its chemical composition should be practically that of rain water. It should be free from chlorine and nitrates and low in solids. The following tables show the composition of some of the cistern waters analyzed during the past year and are sufficient condemnation of the average cistern supply as a source of water for drinking and domestic purposes.

CHEMICAL ANALYSES OF SOME SO-CALLED CISTERN WATERS.

Ltory Der.				lity.	;	Ашп	Ammonia.	Nitr	Nitrogen	۵6.	Š	Solids.	.830		•!	. '
nodad nu M	Analysis.	Odor.	Color.	oidanT	Sediment.	Free.	Albu- minoid	Ni- trates.	Ni- trites.	Cblori	Total.	Total. Fixed.	abra H	Iron.	B. Coll	Remarks.
328	Oct. 11, 1905. April 3, 1906.	. 11	1.0	None. Slight.	V. slight. Con. floce.	.0008	90-0	3.0000	9000	2.20 4.30	39.0	27.9	18.3	.0000	1+	Very badly polluted. Receives ground wa-
228	April 17, 1906. April 17, 1906. April 21, 1906.	_ _ Limey	10 0.0 0.0	None.	V. slight. V. slight. V. slight.	0000	988 248 248	250 250 250 250 250 250	9999 8899	388	28:1 1:0:11	18.3 9.0	4.08 2.06 1.0	Trace. .0000 .0150	111	Receives seepage. Receives seepage. Receives exidised
£888	April 21, 1906. April 21, 1906. April 21, 1906. April 21, 1906.	S. earthy.	آ°." آ	None. None.	V. slight. V. slight. V. slight. Slight.	99999999999999999999999999999999999999	0.000 880 800 7,000	5555 5555 5555 5555 5555 5555 5555 5555 5555	.0020 1.0025 Trace.	8858	55.0 31.0 18.0	&884¥ 0≈00	9.95.4 4.4.8.L	Trace. Trace. Trace.		Badly polluted. Polluted by seepage. Heavily polluted. Slightly poll uted.
318 364 396 452 575 576	May 4, 1906. May 26, 1906. June 25, 1906. Aug. 1, 1906. Sept. 15, 1906. Sept. 15, 1906.	Limey S. earthy None S. foul None None	0,0000	None. None. V.s. Slight. Slight.	None. V. slight. V. slight. S. whitish. S. whitish.	88 1 888 88 1 888	88 1 5 8 8 8 4 5 8 4 4	2.5.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.	88888888 8888888	3.5.2.1 5.5.5.0 6.00 6.00 6.00 6.00 6.00 6.00 6	8888888	88.00 85 85 85 81.4.0 81 80 70	88.000 8.000 8.000 8.000 8.000	171.000 171.000 171.000 .0000	0 0 .	Receives seepage. Receives seepage. Badly polluted. Receives seepage. Good.

*Gas-forming bacteria present.

THE INTERPRETATION OF WATER ANALYSES.

The problems of the water analyst are many and varied. Every new sample submitted for examination brings with it its own peculiar conditions, and must be considered, not in relation to other analyses, but as an original study. The evidences of the mound builders are passed unnoticed by the casual observer, and an upturned flint bears no story, but the skilled eye and trained knowledge of the patient student gives to each a meaning that reveals the history of prehistoric days. Water, like clay and stone, bears evidence of its previous history no less intelligible to him who can read the records. To a chemist each determination in the course of a water analysis has its value, and the sum of these, when added to a knowledge of surroundings, reveals the purity or the pollution of the water, conditions which are so often falsely interpreted.

In the course of our work we are frequently asked to explain the results of our analyses and to tell why, in the case of two analyses apparently similar, we have classed one supply as pure and condemned the other as polluted. We also meet with prejudiced opinion, born of a mistrust of the chemist's ability to judge of a water's purity, a condition of mind unfortunately too often the result of experience with some dabbler with test tubes who made snap judgments based upon imperfect analyses of unsuitable samples, or again with men who believe that the less an analyst knows about the sample at hand the more free from prejudice will be his opinion concerning it. We even more frequently suffer because of that admiration for chemical knowledge and belief in chemical clairvoyance which expects us to decide from a sample, while you wait, if a certain water caused the death of a person a year since, in a distant town, under unknown conditions, a mark of appreciation very trying to a man who knows his own limita-Hardly a day passes but we receive from some anxious person or a physician who should be better informed, a vest pocket sample of water or a perfume bottle containing traces of its original contents, whisky flasks, catchup bottles, piccalilli jars, marked sample 1 and sample 2, and a request for immediate examination. With a view to dispelling some of these illusions and placing the

work of the water laboratory more clearly before its patrons it will be well to discuss in untechnical phrases just what is meant by water analysis and the conditions that make it necessary.

The correct interpretation of analytical results requires a knowledge of the source of a water, its surroundings, geological horizon and past history. Every water has its own characteristics. The presence of any given element of its composition is interpreted according to the kind of water under consideration. Spring water is, of course, colorless; river water of equal purity is probably colored and turbid; pond water may contain considerable amounts of organic vegetable matter without becoming unusable, which, if present in a well water would place it in the polluted class. Deep well water normally may contain large amounts of chlorine, while, an equal amount in a surface or dug well would be a mark of sewage pollution.

In the examination of a water we classify the substances found in it as mineral and organic. This distinction is not altogether a permanent one, for the mineral and organic conditions are dependent on one another, and in part pass into each other. The mineral constituents are usually potash, soda, lime, magnesia, iron and alumina, in combination with chlorine and sulphuric, silicic, nitric and carbonic acids. The organic constituents are, first, living organisms—animal and vegetable; second, the products of organic life, such as albumen, urea, tissue, etc.; third, products of the decomposition of organic matter.

The ordinary methods of analysis determine the form and amount of these constituents at the time the water is analyzed. It is usually not necessary to determine the mineral constituents, but only those factors which are influenced by the presence of sewage or contaminating material. Sewage is very rich in organic matter, chlorine and solids, and so a determination of these components will give us the information we desire. The organic matter contains large amounts of nitrogen, which analytical processes enable us to determine with great accuracy in four forms, namely, as organic nitrogen, as ammonia, as nitrous acid and as nitric acid. This order represents the order of change from organic nitrogen to its most highly oxidized condition. If we find ammonia present in the last form, that is, as nitric acid, we know that

whatever organic matter was present has been oxidized or destroyed, and the source of danger removed; but if we find much ammonia or nitrous acid present we see that oxidation is not complete, a proof that the source of pollution is not far from the supply, and therefore the water must be regarded as unwholesome.

It must be understood that the various constituents determined in a water analysis are not of themselves injurious; they are but indexes of pollution, and the factors found are valuable only as they are comparable with factors predetermined on a water of known purity of the same class. That this important fact may be perfectly understood, below are given detailed analyses of both good and bad waters of several classes:

SPRING WATERS.

•	POTABLE.	POLLUTED.
Odor	Slight vegetable.	None.
Color	0.0	0.0
Turbidity	Slight.	Very slight.
Sediment		Very slight.
Free ammonia	.0010	.0046
Albuminoid ammonia	.0014	.0260
Nitrates	.0500	2.4000
Nitrites	.0001	.0008
Chlorine	.8000	5.0000
Total solids	30.00	35.00
Fixed solids	25.40	31.20
Hardness	18.80	18.80
Iron	.0000	.0000

DEEP WELL WATERS.

	POTABLE.	Polluted.
Odor	None.	None.
Color	10.00	0.0
Turbidity	None.	Very slight.
Sediment		Much red.
Free ammonia	.0056	. 03 10
Albuminoid ammonia	.0000	.0048
Nitrates	.0000	1.0000
Nitrites	.0001	.0040
Chlorine		8.5000
Total solids		181.80
Fixed solids	32.50	104.60
Hardness		27.20
Iron		.0400

DUG WELL WATERS.

	POTABLE.	Polluted.
Odor	None.	None.
Color		0.0
Turbidity	Slight	Slight.
Sediment	Much red.	None.
Free ammonia	.0010	.0030
Albuminoid ammonia	.0000	.0560
Nitrates	.0100 .	.0300
Nitrites		.0900
Chlorine		12.8000
Total solids		98.10
Fixed solids		75.50
Hardness		22,50
Iron		.0000

CISTERN WATERS.

	POTABLE.	POLLUTED.
Odor	Vegetable.	None.
Color	5.0	5.0
Turbidity	Very slight.	None.
Sediment	None.	Very slight.
Free ammonia	.0060	.0050
Albuminoid ammonia	.0100	.0126
Nitrates	.0000	.1200
Nitrites	.0000	.0020
Chlorine		3,5000
Total solids	2.60	54.00
Fixed solids		45.00
Hardness		9.40
Iron		.0000

In every analysis given above the polluted samples were of better appearance than the pure waters, and when subjected to ordinary physical examination would have been accepted as pure. The high ammonia, nitrate, nitrite and chlorine factors obtained showed that on the contrary the supplies were heavily polluted with sewage and absolutely unfit for drinking or domestic use.

Bacteriological examinations, that is, the determination of the number and kind of bacteria present in water, are necessary in many cases, but a single bacterial analysis is so subject to experimental error that the results obtained are of small value. For the purpose of judging the efficiency of filter beds and water purification systems, bacterial tests are most valuable; the filtered water may be changed but little from raw water so far as chemical analysis can determine, and yet bacterial tests may show that a source of danger is largely or entirely removed. Clark and Gage say:*

"In the examination of samples of spring water collected in the

^{*}Am. Pub. Health Ann. Report. Vol. xxig.

proper manner the degree of purity is shown almost absolutely by chemical analysis. The complete analyses of samples from a large number of domestic wells show that polluted waters that might become unfit for consumption at any moment are more plainly indicated by a single chemical analysis than by a single determination of B. Coli. The presence of B. Coli at the time of examination may indicate actual danger to health, and its absence even in the most polluted of these waters, chemically, may indicate lack of imminent danger, but the chemical analyses are certainly the most decisive."

Water analyses are desirable whenever the supply is subjected to probable pollution because of unfavorable location, or when sickness occurs of a type usually communicated in a water supply. We receive many samples for analysis collected from sources known to be polluted. Such examinations are unnecessary. It does not need extensive chemical analyses and a dozen plate cultures to prove the presence of filth in a stream that is used as a sewer for a city, nor is it necessary to waste time over the water from a dug well that by reason of its location must be a cesspool for household wastes or barnyard washings.

The Public Water Supply of the State of Indiana

BY

H. E. BARNARD, B. Sc.

WATER SUPPLY OF INDIANA.

ADAMS COUNTY.

Berne.—No public supply. Water is obtained from private wells and cisterns. The town is located directly on the Mississippi and St. Lawrence watershed.

Geneva.—This town is supplied for the most part by private wells. Most of the wells are driven; two or three open wells. A few cisterns are in use.

ALLEN COUNTY.

Fort Wayne.—This city has its own water supply, built in 1879. The water comes from wells bored 60 to 150 feet through soil, gravel, sand, blue clay, hardpan into rock. It is pumped into a reservoir that has a capacity of 3,000,000 gallons. The water is hard and at times has a metallic taste. There are 100 miles of distributing mains in use, and the service pipes are lead. About 3,500,000 gallons are used daily by about 90 per cent. of the population. There are about 10,000 taps.

Monroeville.—Water supply is from private wells.

BARTHOLOMEW COUNTY.

Columbus.—The water system is owned by the city and was built in 1870. The water is taken from East Fork of White River just below the junction of Flat Rock and Driftwood Fork. The water is obtained from a gallery well which extends diagonally across the river. Sewage enters the river a short distance below the intake of the water supply. The supply is insufficient and must soon be increased. The water is moderately hard and flows through twenty miles of cast iron mains. The service pipes are of wrought iron. There are about 2,500,000 gallons used daily by about 890 families. Very few families use the water for drinking or domestic purposes, getting the water for that purpose from private wells.

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF PT. WAYNE PUBLIC SUPPLY.

April 20, 1906 None 0.0 W.s V.s							Amm	Ammonia Nitrogen	Nitro 848	gen		Solids.	<u>.</u>				
	Namber.	Date of Analysis.		Color	Turbidity.		Free.	bioaimudiA	setstil	Nitrites.	Chlorine.	.fatoT	Fixed.		Iron.	B. Coli.	Remarks
20,1906	291	April 20, 1906	None		V. 8	V. 8	.0200	4400.	.0100	0000	5.	83.0	0.08	14.0	8.	:	G.
May 17, 1906 None 6- Wuch 8. reddish 0120 0028 0100 0004 2.2 Sept. 15, 1906 None 5- V. s S. flore 000 0000 000 3.6 Sept. 15, 1906 None None None None 0.0 None 000 0000 3.6	83	April 20, 1906	None		V. 8	V.8	.0200	.0038	.0100	900	1.20	8.74	0.4	14.8	88	:	ъ.
Sept. 15, 1906	337	May	None	0.0	Much	S. reddish	.0120	.0028	00100	7000		82.6	20.7		3	:	G.
0.0 None V. s 0044 .0000 .0000 3.6	588		None		V. 8	S. floce	9000	900.	0000	9000		8.8	8.4	26.4	8	:	ъ.
	589		None		None	V. B.	.004	0900	0000	.0003	3.6	0.69	£.3	27.2	8	:	Ф.

Elizabethtown.—The supply of this town is from both dug and bored wells, depth from 30 to 100 feet, through substrata, gravel and limestone. There are three deep public wells. Hard.

Hartsville.—Six public wells. The water is hard. Nearly half the families have private wells, some of which are dug and some drilled, the wells being from 18 to 100 feet deep.

Hope.—Private wells and cisterns. Most of the wells are drilled.

Jonesville.—From private wells, driven 18 to 24 feet deep; free flow. Soil is sandy loam, subsoil is sand so deep it is not known what the character of the underlying strata is.

BENTON COUNTY.

Boswell.—Two town wells, the rest private. About ten persons use the water from the town wells. Well's are driven from 50 to 220 feet. One of the town wells is shallow.

Earl Park.—No public supply. Private wells nearly all deep and bored to an average of 100 feet.

Fowler.—The Fowler Utilities Co. was built about 1895 by the Seckner Contracting Co., for the town of Fowler, but is now under private control. The supply is from four driven wells, two 600 feet deep, and two 200 feet. The water is pumped to a standpipe with a capacity of 1,000,000 gallons, and 75,000 gallons per day are pumped. The wells are driven through black loam soil, clay subsoil, rock and gravel at a depth of 100 feet and so on down. The water flows through five miles of cast iron mains into galvanized iron service pipes. About 98 per cent. of the people, or 400 families, use the water. The water is considered pure, although it contains a large per cent. of iron. Practically no wells in the town.

Otterbein.—Private wells about 40 feet deep, extending into the gravel.

Oxford.—Town owns the lease of the public supply, which consists of three driven wells 143, 159 and 175 feet deep, driven into gravel. It is supplied by gravity. There are 3½ miles of cast iron distributing pipe and the service pipe is galvanized iron. About one-sixth of the population, or 153 families, use the water.

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF MONTPELIER PUBLIC SUPPLY. Parts in 100,000.

Part Part								Ammonia	onia.	Nitrogen as	gen		Solids.				_	
Feb. 5,1906 Oily V. mkd. V. moh. red. Ox40 Ox90 Ox10 Ox00 23.9 191.2 90.8 15.6 30 Feb. 12,1906 Brimstone 0.0 v. m.ch. a.earthy 0.04 0.05 0.15 0.01 21.9 108.8 91.5 15.6 0.0 Feb. 12,1906 S. earthy 0.0 s. earthy 0.04 0.00 Tr'ce 20.1 105.0 85.6 15.0 1.4 Feb. 28,1906 W.S. 5 w.much red. .001 0.014 .000 0.000 Tr'ce 20.1 105.0 .0 1.1 .0 .0 1.1 .0 .0 1.1 .0 .0 <th>Laboratory.</th> <th>ρ</th> <th>Date of Analysis.</th> <th></th> <th>Color</th> <th>Turbidity.</th> <th>Sediment.</th> <th>. 691 Ч</th> <th>.bionimudlA</th> <th>Nitrates.</th> <th>Nitrites.</th> <th>Chlorine.</th> <th>.fatoT</th> <th>Fixed.</th> <th></th> <th>Iron.</th> <th></th> <th>lemarks</th>	Laboratory.	ρ	Date of Analysis.		Color	Turbidity.	Sediment.	. 691 Ч	.bionimudlA	Nitrates.	Nitrites.	Chlorine.	.fatoT	Fixed.		Iron.		lemarks
Feb. 12,1906 Oct V.S. Searthy 0.040 0.040 0.050 0.015 0.015 1.05 1.05 0.040 0.050 0.054 0.007 Tr'es 20.1 106.0 85.6 15.0 14 0.0 Feb. 26,1906 Natural gas. 5 + v.much v.much red dish. 0.05 0.004 0.006 0.009 9.05 9.05 9.05 15.0 1.1 0.0 1.1 0.0 1.1 0.0 1.1 0.0 1.1 0.0	8	Feb.	5, 1906	0ily	0.0										15.6	8.	- :	
Feb. 19,1906 CS. earthy 0.0 s moh. reddish. 0.060 0.054 0.004 Tr'ce 20.1 16.0 85.6 16.0 14 1.1 2.0 Feb. 28,1906 Natural gas. 5 + v. much v. much black 0.014 .006 0.019 18.4 102.3 81.7 15.1 .20 April 3,1906 Oily orgassy. 5 - v. mkd, red- ¾ in black. .024 .010 .004 18.4 102.3 81.7 15.1 .20 April 3,1906 Oily orgassy. 5 - v. mkd, red- ¾ in black. .020 .009 .005 .005 .006 .007 .018 .020 .008 .020 .000 .018 .020 .008 .020 .000 .019 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 .00 <t< td=""><th>306</th><td></td><td></td><td>Brimstone</td><td>0.0</td><td></td><td>s. earthy</td><td>.0040</td><td></td><td></td><td></td><td></td><td></td><td></td><td>9.21</td><td>\$</td><td><u>:</u></td><td></td></t<>	306			Brimstone	0.0		s. earthy	.0040							9.21	\$	<u>:</u>	
Feb. 25, 1906 Natural gas. 5 + v. much v. much black 0104 0050 0008 20.9 99.5 80.0 112 20 Feb. 25, 1906 V.S. Marked v. much red 0.014 .004 .010 .010 .011 .010 .011 .011 .010 .011 .011 .010 .011 .010 .011 .011 .010 .011 .012 .012 .011 <th>506</th> <td></td> <td></td> <td>S. earthy</td> <td>0.0</td> <td></td> <td>mch. reddish.</td> <td>0900</td> <td></td> <td>T 0000.</td> <td></td> <td></td> <td></td> <td></td> <td>16.0</td> <td></td> <td></td> <td>:</td>	506			S. earthy	0.0		mch. reddish.	0900		T 0000.					16.0			:
Feb. 25, 1906 Marked v. much red 0014 0084 0100 0010 184 102.3 81.7 15.1 30 April 3,1906 Oily 5- v.mkd. 5- v.mkd. 4,6 0010 0114 0100 0004 13.8 85.5 70.4 12.8 0.0 April 3,1906 Oily orgassy 5- v.mkd. 76 ½in black 0020 0000 1000 1000 1000 10.5 10.5 10.6 1	217	Feb.		Natural gas	+	w. much	v.much black								11.2	83	: :	
April 3,1906 019 0114 010 0104 0114 010 0044 13.8 85.5 70.4 128 0.0 April 3,1906 Like gas 5 - v. mkd, red. ½ in black 0240 0048 0200 0008 20.5 105.0 86.8 4.8 1.4 April 3,1906 Oily orgassy. 5 - v. mkd, red. ½ in black 0030 .0050 .0070 18.5 18.5 15.0 98.0 13.4 .01 April 30,1906 Oily orgassy. 0.0 mkd 3% in black .004 .007 10.0 18.0 87.2 15.2 90 .10 April 30,1906 Oily orgassy. 0.0 mkd 3% in black .004 .005 .005 .007 18.1 80.1 14.1 10.1 90.1 14.1 10.1 11.1	218	Feb.	26, 1906	•	1	Marked									12.1	8.	<u>:</u>	
April 3,1906 Like gas. 5 — v. mkd, red. ½ in black. 0240 0048 0.00 0.00 18.5 115.0 98.0 1.8 1.4 April 3,1906 Oily orgassy 5 — v. mkd, red. ½ in black. 0030 0.00 18.5 115.0 98.0 13.4 .01 April 3,1906 Oily orgassy 0.0 mkd. 3½ in black. .0040 .0050 .0050 18.0 87.2 75.2 90 .10 April 30,1906 Oily orgassy 0.0 mkd. 3½ in black. .0041 .0050 .0050 18.0 87.2 75.2 90 .10 May 26, 1906 Oily orgassy 0.0 v.s. cx.reddish. .0044 .0058 .0070 14.4 101.4 80.7 16.2 .05 May 26, 1906 Musty. 0.0 v.s. s s .	326	April		0ily	5	v. mkd	earthy								12.8	80.	<u> </u>	:
April 3.1906 Oily orgassy 5 - value, dish. 75 in black 000 000 18.0 115.0 98.0 13.4 .04 April 30,1906 Oily orgassy 0.0 mkd 35 in black .0040 .0050 .0020 .0020 .0020 .0020 18.0 87.2 75.2 90 .10 April 30,1906 Oily orgassy 0.0 mkd 35 in black .0014 .005 .010 .0015 .65 .95 76.2 11.0 .14 .10 .0015 .65 .05 .05 .005 <	257	April		Like gas	ī	v. mkd, red-	Kin black							8.8	8.4	71.	÷	:
April 30,1906 30,1906 Oily organisty 0.0 mkd 35 in black 0.046 0.048 0.00 100 101 114 116	258			Oily or gassy.	- <u>-</u>	v. mkd, red-	1/8 in black								13.4	10 .	<u>:</u>	
April 30, 1906 Oily organsy. 0.0 mkd. % in black. 0014 0054 0.0 0.0 1.4 0.0 14.4 101.4 80.7 16.2 0.5 May 26, 1906 26, 1906 Musty 0.0 v.s. cx.reddish. .0012 .0028 .0070 14.6 96.0 96.0 96.0 .05 May 26, 1906 Musty m.ch.reddish. .0081 .0070 .0070 14.6 96.0 80.0 16.2 .03 May 26, 1906 S. earthy 0.0 v.s. m.ch.reddish. .0080 .0010 14.3 96.4 80.0 16.2 .03 May 28, 1906 S. earthy 0.0 v.s. consid-earthy .0160 .0028 .0050 .0069 14.5 96.4 80.0 15.1 .03	301	April		Oily or gassy.	0.0	mkd	3/8 in black								0 6	.10	:	
May 26, 1906 Oily V. 8. cx. reddish. 0012 0028 0050 0067 14.4 101.4 80.7 16.2 .05 .05 May 26, 1506 Way 26, 1906 Ox V. 8. mch. reddish. .0080 .0036 .0010 .0010 14.3 96.4 80.0 16.2 .03 May 26, 1906 Way 26, 1906 .000 .0010	302		30, 1906	Oily or gassy.	_	mkd									0.11	.14	- <u>:</u>	:
May 26,1906 Musty 0.0 v. s. mch.reddish .0046 .0070 .0070 14.3 96.4 80.0 15.1 .03 May 26,1906 S. earthy 0.0 v. s. mch.reddish .0080 .0038 .0010 14.3 96.4 80.0 15.1 .03 May 29,1906 Barthy considerenthy .0160 .0028 .0060 .0008 14.5 94.2 75.0 13.8 .012	354	May	26, 1906			V. 8.	cx. reddish								16.2	8	:	:
May 26, 1906 26, 1906	355	May	26, 1506	Musty	0.0	v. 8	-								16.2	89:		:
May 26, 1906 Earthy 0.0 s consid.earthy 0160 .0028 .0060 .0008 14.5 94.2 75.0 13.8 .012	356		26, 1906	S. earthy	00	V. 8.				0100					1.61	8	÷	:
	357	May	i	Earthy		į	consid.earthy			0900					13.8	210.	$\frac{\cdot}{\vdots}$:

BLACKFORD COUNTY.

Hartford City.—Hartford City owns its own public water supply, which was built in 1894, and consists of seven driven wells 260 feet deep. This water is pumped into a reservoir with a capacity of 385,000 gallons and then goes through 17 miles of cast iron mains. Lead and galvanized iron service pipes are used. There are 950 service lines, but there are several families on some of these lines. The daily consumption is about 400,000 gallons and about 65 per cent. of the people use the water. The water is hard.

Montpelier.—The Montpelier Light and Water Co. supply the water for this city. Their plant was rebuilt in 1905 by the above named company. Their supply consists of deep wells and a spring in old quarry basin of approximately one-half acre in area. The wells average 200 feet in depth in rock, and are drilled. The water is pumped through about six miles of cast iron distributing mains. The service pipes are lead and galvanized iron. One-half million gallons consumed daily. About 75 per cent. of the population, or 200 families, use the water. There are also private wells in use.

BOONE COUNTY.

Jamestown.—The water of this town is apparently pure. The supply is from driven wells owned by the different families, and ranging in depth from 40 to 120 feet.

Lebanon.—The water supply of this town was built in 1894 by Bynum, Brenton & Fall. The supply is from wells; one is 42 feet deep, another 230, another 90. They are driven through black loam, subsoil, stiff clay, blue clay into gravel. The watershed is wooded and cleared land. The water is pumped to a standpipe holding 189,000 gallons. The water is hard and when heated gives off the odor of decayed leaves. There are 15½ miles of cast iron mains. The service pipes are lead. About 65 per cent. of the population use 300,000 gallons a day, and there are 900 taps in use.

Thorntown.—No public water supply. Private dug and driven wells.

Zionsville.—No public supply.

CHEMICAL ANALYSIS OF WATER PROM STSTEM OF LEBANON PUBLIC SUPPLY.

						Ашш	Ammonia. Nitrogen	Nitr.	1 000		Solids.	je.				
Namber.	Date of Analysis.	Odor.	Color	Golor Turbidity.	Sediment.	F166.	.bloummdIA	Nitrates.	Nitrites.	Chlorine.	.fatoT	Fixed.	Hardness.	I Too		Remarks
_	59 May 26, 1906 Sl. foul 5- Slight Exc. red. floc. 1300 .0128 .0100 .0000 .8 58.8 43.7 23.2	Sl. foul	2	Slight	Exc. red. floc.	.1300	.0128	00100	0000	æ	58.8	43.7	23.2	8.		
	36 June 18, 1906 Bl. foul 81. foul 0.0 Bl. floc Mch. reddish. A566 .0164 .0000 .0220 1.2 65.2	Sl. foul	0.0	Sl. floe	Mch. reddish.	9990.	.0164	0000	.0230	12	66.2	52.1	:	1.0	<u>:</u>	:

CHEMICAL ANALYSIS OF WATER FROM PUBLIC WELL AT ZIONSVILLE.

Parts in 100,000.

	Remarks	Good.
		ı
	Iron. B. Coli.	trace
	Hardness.	19.1
· .	Fixed.	52.3
Solids.	Total.	9.09
	Chlorine.	3.10
itrogen as	Nitrites.	.0003
Nitro	Nitrates.	0010
Ammonia. N	Albamimoid.	.0122
Amm	Free.	7600
	Sediment.	V. b.
	Turbidity.	0.0 S V. B V.
	Color	
	Odor.	None
	Date of Analysis.	197 Jan. 30, 1906
	Laboratory Number.	197

BROWN COUNTY.

Nashville.—The water supply is altogether from wells, mostly dug, although there are quite a number of driven wells. The soil is sandy, with a gravel subsoil and underlying strata of clay.

CARROLL COUNTY.

Delphi.—The city purchased their supply in 1902. It comes from three springs flowing from gravel, underlying strata and blue clay. The water runs to the reservoir by gravity and from there is pumped to the standpipe, which holds 27,000 gallons. The reservoir is 60 feet in diameter and 14 feet deep, with a capacity of 350,000 gallons. There are $4\frac{2}{3}$ miles of mains. Wooden pipes are used to reservoir and the rest are iron, with lead and iron service pipes. Four hundred and twenty-five families, or about 85 per cent., used about 250,000 gallons daily. The water has been analyzed.

Flora.—Springs and wells furnish the water supply. Some wells are driven, and these go through black subsoil, blue clay and into hardpan just before striking water.

CASS COUNTY.

Logansport.—Logansport owns its own water supply, which was built in 1875. The water comes from Eel River. This stream averages about five feet in depth and 250 feet wide. There are several picnic grounds above the city and along this stream, and also a park just at the city limits. The water is pumped into iron mains, and lead and iron pipes are used for service pipes. The water is soft and is muddy. About one-half of the people use this water, the rest getting their supply from private wells. The city water is considered to be badly polluted.

CLARK COUNTY.

Charlestown.—The water supply in Charlestown is from private wells, two springs and private cisterns. The water is clear, ample and is considered pure.

Clarksville.—Supply from driven and dug wells.

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF LOGANSPORT PUBLIC SUPPLY.

	Iron. Remarks B. Coli	01	0000
	Hardness.	5.1 .1	7.
•	Fixed.	39.0	8.9
Solids.	Total.	51.7	¥.
	Chlorine.	8.7	ຄຸ
nego	Nitrites.	.0003	.0002
Ammonia. Nitrogen	Nitrates.	0000	0090
onia.	Albuminoid.	9100.	.0150
Amm	Free.	.0230	8110.
	Sediment.	Mkd. red 0230 .0046 .0000 .0003 7.8 51.7 39.0 15.1 10	Mcb. sarthy
	Color Turbidity.	Much	V. slight
	Color	0.0	0.0
	Odor.	V. slight	Sl. earthy
	Date of Analysis.	416 July 18, 1906 V. slight 0.0 Much	4184 July 18, 1906
	Laboratory. Number.	418	181

*Gas formers present. †Not the same as 416.

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF JEFFERSONVILLE PUBLIC SUPPLY.

Parts in 100,000.

	•	
	Remarks.	
	B. Coli.	ı
	Iron.	8
	Hard ness.	19.0
ds.	Fixed.	49.5
Solids.	Total.	65.0
	Chlorine.	2.5
s s	Witrites	.0020
Nitroger	Nitrates.	.3000
onia.	.bionimudlA	.0024
Ammonia.	Free.	.0120
	Sediment.	V. s. floc
	Color Tarbidity. Sedimenf.	None
	Color	0.0
_	Odor.	Decid'ly foul
	Date of Analysis.	July 18, 1906 Decid'ly foul 0.0 None V. s. floc 10120 0024 3000 0020 2.5 65.0 49.5 19.0
	Laboratory Aumber.	413

Jeffersonville.—The Jeffersonville Water Supply Co. furnishes the water for this city. This was built in 1887 by S. R. Bullock & Co., and the water is taken from the Ohio River. The water receives a large amount of sewage or waste, mostly from a distance, the nearest point being the city of Madison, 50 miles above. A standpipe 15 feet in diameter and 150 feet in height has the water pumped into it. The water is soft. There are 12 miles of cast iron mains, galvanized iron being used for the service pipes. Twenty-five per cent., or 600 families, use daily about 1,000,000 gallons. The Water Company is installing a water supply system from driven wells, the quality of which is excellent.

Sellersburg.—Wells and cisterns furnish the supply for Sellersburg. Some of the wells are from 12 to 35 feet in depth, and are through clay, subsoil, slate, cement rock and limestone. Some few wells pass into sand and gravel. Much of the water is of inferior quality, and little else than surface water.

CLAY COUNTY.

Brazil.—This city owns a public water supply of drilled wells, but when there is a fire the water has to be pumped from a mud pond. The inhabitants on the watershed number about 1,000, and the land is cleared. The water is hard and is pumped direct in cast iron mains, with lead and iron service pipes. About 500,000 gallons are used daily, but is not used for domestic purposes except after boiling, as most of the drinking water is obtained from private wells. The city is putting in more drilled wells and expects soon to have sufficient water from this source to serve all purposes.

Bowling Green.—Supply from dug wells.

Carbon.—Supply is from wells. Water is of good quality.

Center Point.—Water supply from wells driven and dug; depth from 16 to 60 feet through soil, yellow clay $1\frac{1}{2}$ to 2 feet, subsoil, white clay, blue clay, black jack, slate and coal. The water at times has a mineral, sulphur, sweetish and vegetable taste and is very hard as a rule. The supply is not the best in the shallow wells.

Clay City.—Families have own wells, dug through clay and subsoil with an underlying strata of rock and coal.

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF BRAZIL PUBLIC SUPPLY.

	•				•	Ammonia.	onia.	Nitrogen as	gen gen		Solids.					
Laboratory Mamber.	Date of Analysis.	Odor.	Color	Turbidity.	Sediment	.ee1H	.bionimudlA	Witrates.	Nitrites.	Oblorine.	.fatoT	Fixed.	.289прлеН	Iron.	B. Coli.	Romarks
211	241 March 26, 1906	Slight 0.0	0.0	None	None0128	.0128	900	0800	9000	8.0	0.4.0	4.6.4	10.8	20:		Good.
242	March 28, 1906	Sl. earthy 5.0-	5.0	Slight	Sl. earthy	.0420	.0228	00100	9100	ьi	61.3	51.6	6.2	Tr'06		Bad.
252	March 31, 1906	Earthy	0.0	V. 61.	V. 61	9000	946	0070	.0013	2.40	59.10 48.2	48.2	10.0	8	- 1	Doubt-
253	March 31, 1906 None	None	0.0	V. sl	IS	0270	.0054	9300	0010	1.80	48.10 40.6	900	7.6	Tr'06	1	Doubt-
75	March 31, 1906	None	0.0	V. 81	V. 81	.0290	9700.	00200	906	1.80	61.30	49.8	10.4	8	1	Doubt-
255	March 31, 1906	Тев	5.0	Consid	Cons. red	.0028	8900	0000	2000	2.70	72.80	67.1	10.2	300	1	Good.
26	Sept. 18, 1906	None	0.0		S1 Cons. earthy0000	0000	7200	.0200	9000	9.4	82.0	62.0	25.4	8.	1	Good.
282	Sept. 18, 1906	None	0.0	V. 81	V. sl V. sl. earthy0136	.0136	2003	.0100	9.4 0200		82.6	60.3	25.3	호		Good.
298	Sept. 18, 1906 None 6.0	None	9:0	V. el.	V. el V. sl0130	.0130	8900	0100	9100.	.3	80.9	80.3	25.2	7 0.	1	Good.

Staunton.—The water used in Staunton is from private wells usually about 17 feet deep. Probably 80 per cent. of these wells go dry one or more times a year. Water is good when supply is plentiful.

CLINTON COUNTY.

Colfax.—All private wells. Some are driven, and range from 27 feet to more than 100 feet deep. Dug wells are different depths, some not more than 12 feet.

Frankfort.—The Frankfort Water Works Co. supplies this city with water from driven wells. The wells are 85 feet in depth, through 20 feet of an impervious blue clay into a gravel strata from which water is taken at 30 feet. The reservoir is 20 feet deep and covered and is filled by direct pressure. Capacity 300,000 gallons. The water is hard and about five years ago became unpleasant to taste or smell. There are 16 miles of mains of wrought iron laid and lined with cement, and the service pipes are galvanized iron. There are 1,650 connections with mains, and 75 per cent. of the people use this water. The daily consumption is about 1,000,000 gallons.

Kirklin.—No water supply but private wells.

Michigantown.—Private wells bored, driven or dug from 10 to 50 feet deep.

Rossville.—Both dug and driven private wells furnish this water supply. The greatest menace to health is a number of false wells dug in the bottom of cellars for purpose of drainage. Many of them reach down to the strata of sand from which the private wells get their water.

CRAWFORD COUNTY.

Alton.—Cistern water used altogether. Sometimes during a drouth or low water, water from the Ohio River is used.

English.—The English Water Company which was built in 1895 by W. L. Luckett and Jno. V. McCoy, furnishes the supply for this town. The water comes from three springs with a capacity of 1,000 barrels a day. There is one mile area of wooded watershed, about 1,000 inhabitants living thereon. The water is supplied by gravity, and there are four miles of iron mains

in use. Galvanized iron is used for the service pipes. About 1,500 gallons per day are used by six hundred families, or 100 per cent. of the population.

Leavenworth.—The water for this town is supplied by the Leavenworth Water Co. from bored well, pumped into a reservoir, size 60x80x10. This plant was established in 1896. The well is 77 feet deep through sand and gravel. There is a bad taste occasionally caused by decayed leaves that have blown in the reservoir. There are 7,140 feet of cast iron mains and galvanized iron service pipes; 2,700 gallons are used daily, and 10 per cent., or about 16 families, use the water. There are also two public wells and quite a number of private wells and cisterns.

Marengo.—Grant & Davis Water Co. supply this town. The company was established in 1904. The supply is from a spring in limestone, with a capacity of 5,000 to 10,000 gallons per hour. Water is pumped into closed reservoir that holds 1,200 barrels in form of cistern. The water is hard. Cast iron is used for the mile and a half of mains, and gaspipes, usually black, are used for service pipes. Fifty families, or 30 per cent., use the water, and about 6,000 gallons daily is consumed. There are also private wells.

Milltown.—Private wells and cisterns supply this town. Dug wells run 30 feet in depth and bored wells run 200 feet through soil, lime and clay, subsoil soapstone, under this sand, gravel and deeper limestone rock.

DAVIESS COUNTY.

Elnora.—The only public water supply in this town is from three driven wells on the streets, and this is supposed to be pure and wholesome. Private wells are generally driven, and have an average depth of about 15 feet. Soil and subsoil is sandy, and underlying strata is gravel. The water is hard.

Montgomery.—There are two public wells 20 to 25 feet in depth. As this is very shallow there is no way of accounting for the lack of typhoid fever. One well most used is within three feet of an uncemented street drainage pipe. The private wells are dug from 15 to 40 feet deep, but generally they are 20 to 25 feet. Supply is small and is almost entirely exhausted during dry weather. The soil is clay. The entire corporation of Montgomery

is a watershed drainage north, south, east and west. There are 700 inhabitants on this cleared land, and 25 per cent. of the population use the water from the public wells in dry weather.

Odon.—Odon is built in a slight depression between two areas of upland, each several miles in extent. There is no public water supply. The private wells are dug from 12 to 20 feet in depth. Some wells in the lower part of town are contaminated with surface water in wet weather, which causes a bad taste. The water is both hard and soft.

Washington.—The City Water Co., established in 1887 by C. E. Gray, supplies the water for this town. The supply is pumped from a stream to the standpipe, which holds 240,000 gallons of water. The water sometimes becomes muddy and has a bad odor and taste. Ten miles of iron distributing mains are in use, with service pipes of the same material. About 400 families use the water and the average daily consumption is 1,500,000 gallons. A new filter is being put in.

DEARBORN COUNTY.

Aurora.—The City of Aurora Water Co., a private company which in 1904 had the Phoenix Construction Co., of Chicago, build their plant, furnishes this city with their water supply. The water is pumped from the Ohio River into a reservoir holding 280,000 gallons. No sewage or waste above the intake nearer than Cincinnati, which is 28 miles above Aurora. The water is purified by the N. Y. Continental Jewell Filtration Co.'s system. The water is soft and flows through 8 miles of 10-inch cast iron distributing mains. Galvanized iron is used for the service pipes. About 200 families are now using the water at the rate of about 150,000 gallons per day. This system was completed during the past year.

Lawrenceburg.—The supply for this town is from driven public wells ranging in depth from 40 to 70 feet, private wells and cisterns. The water is supposed to come from the Great Miami River.

Moores Hill.—No public supply. Private wells are dug from 20 to 35 feet deep. Water is from 8 to 15 feet deep. The soil is clay with limestone strata. During dry falls the water in the wells gets very low.

DECATUR COUNTY.

Greensburg.—A private concern called the Greensburg Water Co., supplies Greensburg with its water. This was established in 1889 by the Ludlow Valve Manufacturing Co. The supply is from bored wells going through yellow clay and limestone into rock. The water is pumped direct. There are about 14 miles of cast iron mains with galvanized iron service pipes, which supply about 400,000 gallons of water per day. About 500 families, or 40 per cent., use this water. There are also private wells in use.

Millhausen.—Supply from private dug wells. They range from 24 to 40 feet in depth. Water first class.

Westport.—Bored and dug wells, and cisterns supply Westport with water.

DEKALB COUNTY.

Auburn.—In 1898 the Arbuckle-Ryan Co., of Toledo, Ohio, built the water-works for the city of Auburn. The water comes from five 10-inch drilled wells 94, 224, 234, 238, 242 feet deep with a pumping capacity of 1,000,000 gallons every 24 hours. The water is pumped direct into the mains, of which there are 9½ miles of cast iron pipe. The service pipes are lead and galvanized iron. About 600,000 gallons daily are consumed by 50 per cent. of the population, or 460 families. There are also private wells.

Garrett.—In 1896 the City of Garrett built its own water plant and gets its water supply from bored wells. These wells are bored 150 feet through blue clay into gravel, and the water is pumped direct into the mains. About eight miles of mains are used in distributing the water, and the service pipes are of galvanized iron and lead. There are about 500 families using the water, or 90 per cent., and the average daily consumption is 600,000 gallons.

St. Joe.—No public supply.

Waterloo.—The Waterloo Water & Light Co. was built in 1902 by the Olds Construction Co., of Ft. Wayne. This plant furnishes the water supply for the city. The wells are drilled 768 feet in depth, the water is pumped in a reservoir with a capacity of 105,000 gallons, and 8,500 feet of mains are used, made of cast

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF GREENSBURG PUBLIC SUPPLY.

Date of Analysis. Odor. Color Turbidity. Sediment. Sedimen	.19dı						Amm	Ammonia. Nitrogen	Nitrog	d D		Solids.					
103° Nov. 10, 1906	TrotarodaJ muM	Date of Analysis.		Color		Sediment.	.еетЯ	.bionimudl A	Nitrates.		.enitoidu	· _			Iron.	B. Coli.	Remarks.
204 Feb. 12, 1906	10%	Nov. 10, 1906	Sl. foul	8	Slight	V. much floc .	.0218	0220	0150	3000	9.	83.1	70.4		2000	:	
	8	Feb. 12, 1906	None	0.0	None	Mkd. earthy .	.0065	.0074	0000	00100	9.	23.2	22.5	11.5	Frace	:	

"Not same as 204.

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF JASPER PUBLIC SUPPLY.

Parts in 100,000.

						Amm	Ammonia. Nitrogen	Nitro 88	gen		Solids.	<u></u>				
Laboratory.	Date of Analysis.	Odor.	Color .	Color Turbidity.	Sediment.	F166.	.bionimndlA	Nitrates.	Nitrites.	Chlorine.	.fatoT	Fixed.	Hardness.	Iron.	B. Coli.	Remarks
£3	421 July 18, 1906	V. slight	0.0	None	V. slight 00 None Sl. earthy 0044 .0060 .0000 .0180	96.	0900	0000	.0180	64	4.4	2 34.4 27.4 14.0 Tr'ce	14.0	Tr'ce	_ :	
3	422 July 18, 1906	Sl. foul	0.0	Slight	0.0 Slight Sl. earthy0034 .0138 .0500 .0000	.0034	.0138	0090	000	οį	.2 13.0 10.6	10.6	1 1	4.1 Tr'ce	•	

" Gas formets present.

iron with galvanized iron service pipes. About 20,000 gallons are used per day, but only a few of the people use the water, about 20 families, or 1 per cent. of the population.

DELAWARE COUNTY.

Albany.—Six years ago the Albany Water & Light Co., using a system of drilled wells, began supplying the city of Albany with water. The wells are drilled 165 feet, and the water is supplied by direct pressure. About five miles of cast iron pipe distribute the water. The service pipes are of cast iron, and 75 per cent. of the population use this supply.

Eaton.—About a dozen families in Eaton are supplied with water piped from a deep well. This water is pumped into an elevated tank by a gas engine. Private wells supply the rest of the town.

Muncie.—Muncie is supplied with water by the Muncie Water Works Co., a private concern. The water is taken from deep wells and White River and Buck Creek. The watershed of Buck Creek is 15 square miles. In the summer there are frequently picnic parties along White River above the intake. Each stream at point of intake has an inflow of 5,000,000 gallons daily. There is no waste or sewage received in the stream other than that from the oil wells, and that is equal to 15 per cent, of the flow of the stream at low water. The wells are drilled about 100 feet and the supply comes from rock. The water is pumped direct into the mains, which are of cast iron. Wrought iron and lead are used for the service pipes. The water from White River has an unpleasant taste of salt and oil. About 3,500,000 gallons are used daily. An auxiliary pump house has now been erected on Buck Creek and line run to filter plant at main pumping station to deliver water to filter, from which it is pumped to consumers.

Selma.—All private wells. About half of them range in depth from 65 to 125 feet, and the rest of them from 20 to 40 feet. A few cisterns are used for supplying the drinking water.

DUBOIS COUNTY.

Birdseye.—Private wells and cisterns supply this town.
Huntingburg.—In 1893 Huntingburg established a public

Huntingburg.—In 1893 Huntingburg established a public water supply. The water is obtained from a pond covering 20 acres, and

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF ELKHART PUBLIC SUPPLY.

						Amm	Ammonia.	Nitrogen 2.6	gen ,		Solids.	- i				
Totardad Jumber.	Date of Analysis.	Odor.	Color	Color Turbidity. Sediment.	Sediment.	F166.	.bionimndlA	Nitrates.	Mitrites.	Сыгіве.	Total.	Fixed.	Hardness.	Iron.	B. Coll.	Remarks
215	215 Feb. 26, 1906	Sl. earthy	5	Sl. earthy 5.— None None 30050 3164 31000 0010 4 23.7 19.6 9.9 Tr'ee	None	0900	.0164	.1000	.0010	₹.	23.7	19.6	6.6	Tr'06	:	
ă	225 March 10, 1906	None		0.0 None V. el. earthy0038 .0188 .0300 .0017	V. sl. earthy.	.0038	.0188	9000	7100.		24.5	20.2	9.5	Tr'08	+	3 24.5 20.2 9.5 Tr'oe +
276	276 April 16, 1906 Barthy	Earthy		5 V. slight Sl. reddish0010 .0054 .0100 .0115 .4 27.0 22.6 9.2 .04	Sl. reddish	00100	900	.0100	.0v15	₹.	0.72	23.6	9.3	ş		<u>:</u>

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF GOSHEN PUBLIC SUPPLY.

Parts in 100,000.

	Remarks	
	B. Coli.	• ÷
	Iron.	210. 710.
-	.звопрлеН	22.3
ds.	Fixed.	25.5
Solids.	.fatoT	32.6
	Chlorino.	4. 6.
ue.	Nitrites.	.0120
Ammonia. Nitrogen	Nitrates.	00400
onia.	.bionimudlA	.0060
Amm	Free.	.0060
	Sediment.	Consid. earth Much earthy.
	Color Turbidity.	V.sl. earthy. 0.0 Slight Consid. earth .0064 .0068 .0400 .0046 .4 32.6 29.1 22.3 .015 ** Sl. earthy. 0.0 Slight Much earthy0050 .0060 .0000 .0120 .2 31.1 25.5 21.1 .017 **
	Color	0.0
	Odor.	V. sl. earthy.
	Date of Analysis.	472 Aug. 11, 1906
	Laboratory Number.	473

* Gas formers present. † Acid formers present.

6 feet deep, with a mud bottom. The watershed is about 500 acres in extent, and is partly wooded and partly cleared, with about 20 inhabitants thereon. The water is pumped from the pond into a standpipe that has a capacity of 125,000 gallons. At times the water develops an unpleasant odor and taste as of decaying vegetable matter. This water is soft. Four and one-half miles of mains are used, and these are made of iron with galvanized iron service pipes, 166,664 gallons of water being used daily, and about 600 families, or 75 per cent., use the water. The city is building a new pond or lake in addition to the present one, which will have an average depth of 20 feet, and cover from 40 to 50 acres. The watershed will be the same as the old pond, the new one being immediately below the old. The old pond will be used as a catch basin.

Jasper.—The town of Jasper built its water supply about 10 years ago and uses the water from the Patoka river. The water is pumped into a reservoir, and from there flows through about four or five miles of distributing mains or iron. One thousand families use this supply. The water is soft. In the spring the water is not clear, but otherwise is fine water. There are two reservoirs in Jasper, but only one is in use.

ELKHART COUNTY.

Bristol.—There is no public supply in Bristol,

Elkhart.—The Elkhart Water Company, a corporation mainly owned by Chicago capitalists, was built in 1884. This supply consists of five dug wells 34 feet in depth, in gravel mostly. The water is medium soft and gets yellow after a fire. The mains are of iron and the service pipes lead. About two-thirds of the population use the water.

Goshen.—In 1880 the city of Goshen built a public supply. There are two open wells 40 feet in diameter and 35 feet deep, with a sand bottom, and this water is pumped to a standpipe. The water has an irony taste. About 27 miles of distributing iron mains with iron and lead service pipes are in use. About 3,000,000 gallons are consumed daily. Probably only 100 families use the water, as wells are plentiful and that water is used. The public supply is good.

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF CONNERSVILLE PUBLIC SUPPLY.

						Amm	Ammonia.	Nitrogen as			Solids.				
Laboratory Number.	Date of Analysis.	Odor.	Color	Color Turbidity.	Sediment.	Free.	Albumimoid.	Nitrates.	Nitrites.	<u></u>	Fixed.	Hardness.	Iron.	B. Coli.	Remarks
90 No	Nov. 2, 1905 S. earthy	S. earthy	7.	None	None S		.0010 .0080 .1500 .0006	909	.2	- 0	.20 35.4 27.2	=	₹.	- : • • • • • • • • • • • • • • • • • • •	840.
89 No	Nov. 2, 1905 S. earthy	S. earthy	-:	None	None S S	.0026	.0086	200	310	.8	5 28.5		8.		

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF COVINGTON PUBLIC SUPPLY.

Parts in 100,000.

	Remarks	. Good.
	B. Coli.	:
	Íron.	trace
	.авепртаН	14.1
Solids.	Fixed.)	47.8
Solids.	Total.	9.99
	Chlorine.	3 30
gen	Litrites.	.00034
Ammonia. Nitrogen	Nitrates.	1.2 .00034 3 30 66.6 47.3 14.1 trace
onia.	.blonimudfA	.0054
Amm	.003	
	Sediment.	V. 8
	Color Turbidity.	0.0 None V. 8
	Color	
	Odor.	None
	Date of Analysis.	208 Feb. 19, 1906 None
	Laboratory Number.	

Nappanee.—This town owns a bored well 160 feet deep. The water is pumped into a tank 20 feet in diameter and 24 feet deep, with a capacity of 75,000 gallons; from this the water flows through six miles of iron mains. Very often an unpleasant odor and taste develops. About 300 families, or 50 per cent. of the people, use the water, and there are 200,000 gallons used daily. There are also many private wells in use.

Middlebury.—There is no regular public water system in this town. There are three wells from which six or eight families get their water, but the majority of the people have their own wells. Some of these wells are driven, a few are drilled, and there are still a few open wells in use.

Millersburg.—Every one in this town owns their own well, most of them being the tubular wells. There may be a very few open wells still in use. The wells go through sand and clay loam one foot, yellow clay two feet to eight feet, sand and gravel 10 to 20 feet, and water is reached 12 to 20 feet from the surface.

FAYETTE COUNTY.

Connersville.—In 1869 the city of Connersville had a public water system built by the Holly Water Works Co., of Massachusetts. This water comes through a hydraulic canal which is fed by the west fork of Whitewater river and is pumped from the canal into the city mains. The watershed consists of 250,000 acres, partly wooded, partly cleared and having about 6,000 inhabitants thereon. The flow of the stream is about 5,000,000 gallons daily. The water at times develops an odor of decaying mosses and grasses and is soft. Fifteen to eighteen miles of distributing mains are in use. These are of iron, with lead and iron service pipes. The supply is ample for fire purposes, but is not good for drinking purposes, and nearly all the people use well water for domestic supply. About 1,000,000 gallons per day of the city water is used.

FLOYD COUNTY.

Georgetown—Four dug wells supply this town with its water. These wells are 43 feet, 41 feet, 37 feet and 28 feet deep and are all seep wells. One of them develops a sulphur odor and taste at

times. The water is hard. One of these wells fills up by an underground supply about 10 feet from the top at every large rain. About 50 per cent. of the population use this supply.

FOUNTAIN COUNTY.

Attica.—In 1889 Attica rebuilt her public water supply. The supply is from bored wells 100 feet deep and bored through loam, gravel, water, clay, hard pan, into the gravel and sand containing the water used. This water is pumped to a covered reservoir 200 feet above pump, which has a capacity of 500,000 gallons. The flow of the water is 1,000,000 gallons per 24 hours. There are six or seven miles of cast iron mains in use, with galvanized iron service pipes, and 600 families or about 98 per cent. of the population use the water, the average daily consumption being 275,000. There are but few private wells in use.

Covington.—The Covington Light and Water Co. built in 1893 and owned by a corporation, furnishes the water in this town. There are two springs which are fed by large streams of water. The springs are about 15 feet deep and 18 or 20 feet square. The water is pumped to a standpipe about 100 feet high and about 16 feet in diameter. There are eight or ten miles of cast iron mains. The service pipes are white metal. About 50,000 gallons per day are used, and about 80 per cent. of the people use the water. The water has been analyzed several times and has always been found to be a pure supply.

Hillsboro.—Private wells, which are driven from 70 to 85 feet deep furnish the water supply at this place.

Veedersburg.—The town of Veedersburg owns a system of two bored wells which was built in 1898. These wells are 36 feet deep, going through sandy soil, gravel, subsoil, while the underlying strata is shale, and 65,000 gallons of water are used each day. The water is pumped to a standpipe holding 90,000 gallons, from which the water flows through two and one-half miles of cast iron mains. Service pipes are of galvanized iron. About 33 per cent. of the inhabitants use this supply. The area of the watershed is eight acres, with about 25 inhabitants thereon.

Wallace.—No public system. Private wells dug from 22 to 40 feet and natural springs supply the water. Town is well drained by natural waterway.

FRANKLIN COUNTY.

Brookville.—Brookville owns its own public water supply. It was built in 1891 by Thomas Hardman and the water comes from a stream. It is pumped to a reservoir. At times it becomes muddy and fishy, but in winter is clear and good. Four-inch, 8-inch and 10-inch cast iron mains are used, with galvanized iron for service pipes. Seventy-five per cent. of the families use the water, but it is not used for cooking. All the people use cistern water for drinking and domestic purposes.

Laurel.—There are several town wells in Laurel, and these with private wells furnish the supply. Most of the wells are driven, going through gravel and alluvial deposit. In the main part of town water is found at a depth of 21 feet, and in the upper part of town at 30 to 40 feet. One dug well which belongs to the town is 48 feet deep. The dug well in the main part of town is the one mostly used. Both these wells are sealed with cement.

Mt. Carmel.—No public supply. Oldenburg.—No public supply.

FULTON COUNTY.

Kewanna.—Supply for Kewanna is from private wells from 65 to 90 feet deep. Water hard, containing much lime.

Rochester.—In 1893 the town of Rochester built its public water supply. The water is taken from a lake three and one-half miles square. It is about 20 feet deep, with muck and sand bottom, and is fed by springs and Mill creek. The watershed consists of seven square miles of cleared land and about three square miles of wooded land, with 200 inhabitants living thereon. There are many picnic parties along the shore of the lake. The water is pumped to a standpipe that holds 105,000 gallons. The water has an unpleasant odor, like steam from heated, stale rain water, and is very soft. Ten miles of iron mains are in use and the service pipes are of lead and galvanized iron. About 150 families, or 25 per cent., use on an average 400,000 gallons per day. This is not used for drinking at all, as every family has a private well.

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF ROCHESTER CITY PUBLIC SUPPLY.

						Ammonia. Nitrogen	nia.	Nitrog	gen		Solids.	<u> </u>				
Laboratory Number.	Date of Analysis.		Color	Turbidity.	Sediment.	Free.	.bionimudlA	Nitrates.	Nitrites.	Chlorine.	Total.	Fixed.	натапьтан.	Iron.	B. Coli.	Remarks
443	443 July 31.1996 Earthy 5+ V.s 8 8 5020 .0324 .0100 .0003 .3 19.2 12.7 8.6 Tr'ce * Bad.	Earthy	5+	V. 8		.0020	0324	0010	:0003	eć.	19.2	12.7	.6.	Tr'ce	*	Bad.
*	* (Jas formers.		 							1	1					

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF FAIRMOUNT PUBLIC SUPPLY.

Parts in 100,000.

						Ammonia.	-	Nitrogen as	ren.		Solids.					
Laboratory.	Date of Analysis.	Odor.	Color	Color Turbidity.	Sediment.	.еет	.bioaimudlA	Nitrates.	Nitrites.	Chlorine.	.latoT	Fixed.	Hardness.	Iron.	B. Coli.	Remarks
299	Sept. 20, 1906	None	0.0	V. B	ν. 8	0900	.0124	.0700	0100.	15.0	0.70	6.9	32.1	00	•	.0050 .0124 .0700 .0010 15.0 107.0 76.9 32.1 0 0 * Doubtf.
2	Sept. 20, 1906	V. 8	0.0	V. 8	: ::	.0500	8200	.000	.0700 .0003 11.8 64.2	11.8		38.2	32.8	.03		Good.
602	Sept. 20, 1906	None		00 V. 8	V. 8	.005	.0128	0020	.0126 .0700 .0008 15.5 84.1	15.5	84 1	62.7 31.9 0.0	31.9	0.0	•	Doubtf.

*Gas formers present.

GIBSON COUNTY.

Ft. Branch.—No public supply.

Hazleton.—Wells, cisterns and springs furnish the water for this town. Land is well drained.

Oakland City.—In the fall of 1903 a private stock company built the water system which furnishes Oakland City with its supply. The water is taken from a pond covering about 19 acres and with an average depth of 12 feet. This has a mud bottom. The watershed is about 70 acres in extent with nine inhabitants living on it. The water is pumped to a standpipe having a capacity of 60,000 gallons. In the summer a slight odor is noticeable. About four miles of cast iron mains are in use, having galvanized iron service pipes. About 200 families, or 40 per cent., use 50,000 gallons per day. The water is soft.

Owensville.—No public supply.

Patoka.—Most of this water supply is driven wells from 10 to 28 feet deep. Sandy soil with gravel underlying.

Princeton.—The Princeton Water & Light Co., a private company, was built in 1893. The water is taken from the Patoka River. The watershed consists of 350 square miles, 75 miles of which are timbered lands and the balance cleared. Population averages 30 to the square mile. The normal flow of the Patoka River is about 4,800 gallons per second. There are several small towns located above the water station and sewage is received in the river above the intake. A standpipe with a capacity of 120,000 gallons is used. The water is soft and has an unpleasant odor and taste at times. Ten miles of cast iron mains with galvanized service pipes are used. Three hundred thousand gallons per day are consumed. About 200 families, or 30 per cent., use this supply, but there are also 600 wells in the town.

GRANT COUNTY.

Fairmount.—Fairmount owns its own supply, which was built in 1894 by the Howe Pump Co., of Indianapolis. This supply consists of six artesian wells, from 40 to 100 feet in depth. These wells are bored through black loam, subsoil, blue clay, underlying strata limestone. The water is pumped by suction and forced through mains by pressure. The water is hard. They have five

miles of cast iron mains, with galvanized iron service pipes. Four hundred and seventy-five families, or 10 per cent., use the water, and there are many wells in the town.

Gas City.—In 1898 the Seckner Contracting Co., of Chicago, built for Gas City its water supply. This is bored wells 300 feet in depth, through sandy loam with sandy subsoil. The water is forced from wells into reservoir by air compression. The reservoir has a capacity of 4,500 barrels, and is 45 feet in diameter and 12 feet deep. There are 10 miles of cast iron mains and galvanized iron service pipes. Four hundred and forty taps are in use, or 66 2-3 per cent. of the population use the water. There are also private wells used.

Marion.—Wells from 120 to 200 feet deep bored into stone furnish the water supply for Marion, and are owned by the city. The reservoir which holds the water has a capacity of 900,000 gallons, and the new one when completed will hold 2,000,000 gallons. This water has an odor and taste of gas. Twenty-five miles of mains of cast iron, with galvanized service pipes, are used. Twenty-six hundred families, or 75 per cent., of the population, use this water and about 1,500,000 gallons per day are consumed. The water from one of the wells is of a medicinal character.

Upland.—The Upland Water Works Co., a private corporation, furnishes the water supply for this town. The works were built in 1892. The water is from a drilled well 250 feet deep, 50 or 60 feet being in limestone. The soil is clay subsoil, blue clay, and perhaps a strata of gravel. The water is pumped direct into the mains by a force pump. The water is hard. About two miles of distributing mains are used, these and the service pipes being of galvanized and wrought iron. The water was analyzed several years ago by the State Board of Health. One hundred and eighty-five families, or 75 per cent., use this supply. There are several private wells in the town, being either drilled or bored to gravel 100 feet or more.

GREENE COUNTY.

Bloomfield.—The Home Light & Water Co., built in 1904 by Geo. Cadogan Morgan, of Chicago, supplies Bloomfield with its water. This is from wells 275 feet deep, capable of supplying 275,000 gallons daily. These wells are bored through 12 feet of

clay, then sand rock the balance of the way. It is pumped to a standpipe, this holding 35,000 gallons. The water tastes and smells of sulphur and is soft. The cast iron mains are four and one-half miles in extent, and the service pipes are of galvanized iron. The water has been analyzed by Robt. E. Lyons, of Indiana University. Ninety-two families, or 25 per cent. of the population, consume 30,000 gallons per day.

Linton.—The Linton Water Co., a private company, built in 1902 by F. H. Beeman & Co., Louisville, Ky., furnishes the water supply of Linton. There are six bored wells averaging 85 feet in depth, and now furnishing 300,000 gallons per day, which is half the capacity of the wells. The wells are bored through clay loam, then 25 to 30 feet blue clay and then 25 to 30 feet good gravel, in which the water is found. The water is forced into the mains by direct pressure, there being 111/2 miles of cast iron mains in use. The service pipes are galvanized wrought iron. The water was analyzed in 1902 by Dr. J. N. Hurty, of Indianapolis. hundred and fifty to 500 families, or 25 or 30 per cent., consume daily 300,000 gallons. There are a great many private wells used, practically all shallow wells, some of them dangerous. The pub lic supply wells are drilled in Buck Creek Valley, a small stream which goes dry often, in fact is probably dry seven months out of the year. This empties into Bee Hunter ditch about a mile south of water station.

Lyons.—No public system. There are a few drilled wells from 120 to 200 feet deep, but the majority are about 15 to 30 feet deep. The soil is mostly clay and black loam, the black loam being decayed vegetable matter.

Worthington.—The Straw Board Rivers & Co., a private concern, built in 1897, furnishes the water supply for Worthington. This consists of wells bored 50 feet. The water is pumped to a standpipe which is 20x100 feet.

HAMILTON COUNTY.

Atlanta.—No public supply.

Arcadia.—There are two public wells drilled 220 feet deep. The majority of the citizens own their own drilled wells, ranging in depth from 50 to 250 feet.

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF NOBLESVILLE PUBLIC SUPPLY. Parts in 100,000.

					Amm	Ammonia. Nitrogen	Nitro	Ken		Solids.	_	_		-	
							ž]	-		_		_		
Date of Analysis.	Odor.	Color	Color Turbidity.	Sediment.	Free.	.bionimudl A	Nitrates.	Nitrites.	Chlorine.	Total.	Fixed. Hardness.		I on B. Coli.	Remarks	8
248 March 30, 1906	None 0.0	0.0	V. slight	V. slight V. slight .0016 .0018 .0300 .0006 1.6	.0046	8100.	0300	9000		37.5	30.0 15.0	0.			:
March 30, 1706 None 0.0	None	0.0	None	None V. slight0050 .0020 .0500 .0005 1.6 47.5	.0050	.0020	.0500	2000	- 9.1		36.6	14.9	0000		:
April 16, 1906 None 5	None.	5. –	None	None None 0020 .0028 .1200 .0000 1.2 43.6	.0020	.0028	.1200	0000	- S		35.6 16.4	10.	<u> </u>	-	:
June 18, 1906 None 0.0	None	0.0	None	None V. slight 0070 .0016 .1000 .0003 1.10 43.7 31.5 14.8 0.0	00700	9100	1000	:0003	1.10	3.7	5 14	8.	.1		:
395 June 25, 1906 V. sl. earthy . 0.0	V. sl. earthy		Slight	Slight Mkd. brown0010 .0034 .1000 .0000 1.2 49.2 35.0 14.6 .10	.0010	.003	1000	0000	1.2	9.2	5.0	9		:	:

CHEMICAL ANALYSIS OF WATER FROM PUBLIC WELLS AT WESTFIELD.

Parts in 100,000.

		Remarks	Bad. Bad.	
		B. Coli.	1 1	
		Iron.	.0166	
		Hardness.	25.9	
	ls.	Fixed.	92.6	
	Solids.	Total.	47.4	
		Chlorine.	26.8	
	gen	Nitrites.	.0012	
	Nitro	Nitrates.	3500	
	nia.	.bionimudl A	00010	
	Ammonia. Nitrogen	Free.	0000	
		Sediment.	None 5 V. s	
		Color Turbidity. Sediment.	V. s	
		Color	6	
		Odor.	None	
		Date of Analysis.	172 Jan. 3, 1906	
i		Laboratory Number.	172 173	

Carmel.—No public system.

Cicero.—No public supply.

Noblesville.—The Noblesville Water & Light Co., a private company, built in 1891 and 1892, gets the supply for Noblesville from driven wells. There are 15 of these wells, ranging in depth from 60 to 70 feet through hard pan or blue clay into a gravel water bed. There are also two limestone wells 350 feet deep, operated by air compressor into reservoir, from which the supply is pumped into the water mains. The water from the other wells is pumped direct. The reservoir holds about 50,000 gallons. There are 12 miles of cast iron mains, with lead and galvanized iron service pipes, in use. Five hundred and fifty or 600 families use this supply, or about 20 per cent., and 400,000 gallons daily are consumed.

Sheridan.—No public supply.

Westfield.—No public supply.

HANCOCK COUNTY.

Fortville.—No public supply.

Greenfield.—Greenfield's supply is from driven wells the water from which is pumped. There are several miles of cast iron mains. About 90 per cent. of the people use the supply, and 200,000 gallons daily are consumed.

HARRISON COUNTY.

Corydon.—There are two public water supplies in Corydon. The town has a spring which furnishes water, and a private concern, the W. H. Keller Co., built in 1903, which gets its supply from the creek. This water is pumped into a reservoir 60x80 and 8 feet deep. There are about five and a half or six miles of mains of cast iron used. Service pipes are of galvanized iron. About 200 families, or 50 per cent., use the supply.

Elizabeth.—This town is supplied with water from two public wells bored 120 and 78 feet in depth, one dug well 30 feet deep, eight private wells and two private springs.

Laconia.—No public supply.

Mauckport.—Public wells from 60 to 70 feet, bored, and one dug.

New Middletown.—No public supply.

CHEMICAL ANALYSIS OF WATER PROM SYSTEM OF NEW MIDDLETOWN PUBLIC SUPPLY.

Bolids.	Ohlorine Totel. Fixed. In the control of the contro	None 0.0 Marked Mkd.earthy. 0004 0088 3000 0003 2.0 58.5 47.0 34.8 .02 + Bad.
Nitrogen as	Nitrates. Mitrites.	000 0008
Ammonia.	Albuminoid.	8900:
Amm	.991 <u>1</u>	7000
	Rediment.	Mkd. earthy .
	Color Turbidity.	Marked
	Color	0.0
	Odor.	None
	Date of Analysis.	727 0ct. 29, 1906
	Laboratory Aumber.	727

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF NEW CASTLE PUBLIC SUPPLY.

Parts in 100,000.

						Ammonia.		Nitrogen as	g		Solids.	<u></u>			
Laboratory Number.	Date of Analysis.	Odor.	Color	Color Turbidity.	Sediment.	.6911	.bloaimudiA	Nitrates.	Nitrites. Oblorine.	Total.	Fixed.	Нательев.	i g	B. Coll.	Remarks
485	485 Aug. 15, 1906 None 0.0 Slight	None	0.0	Slight	Slight 5006 5064 5600 5002 7 41.4 32.7 33.3 94 - Good.	9000	J. 1200 .	0.	200	7 41	4 .	7 88.8	<u>s</u>		Good.

HENDRICKS COUNTY.

Brownsburg.—No public supply.

North Salem.—No public supply. One well is 800 feet deep with flowing water.

Plainfield.—No public supply.

HENRY COUNTY.

Knightstown.—This town is supplied with water from a system of wells, which was built in 1894 by the Boughen Engineering Co., of Cincinnati. The wells are all bored to about 60 feet in depth, through four feet of soil, 15 feet of gravel, 40 feet of shale into limestone. There are eight of these wells. This water is pumped direct in day time, but standpipe service is used at night. The capacity of the standpipe is 100,000 gallons. Six miles of cast iron mains are used and the service pipes are galvanized iron. Two hundred and seventy-five families, or 50 per cent., use the supply, which averages about 60,000 gallons, consumed daily.

New Castle.—In 1889 this city built its own public water supply, consisting of wells drilled from 106 to 170 feet deep. The water is on top of a limestone strata. It is pumped to two reservoirs with a capacity of 9,000 gallons each. These are 10 feet deep by 40 feet wide. The water is hard. Cast iron mains 10 miles in extent are used, with galvanized iron service pipes. About 750 families, or 75 per cent. of the population, use the water, and the average daily consumption is 750,000 gallons.

Middletown.—Middletown's supply consists of three artesian wells bored by the town in 1896. These wells are 86 feet in depth and the flow is about three barrels a minute. There is an odor of sulphur at the dead ends of the mains. Four or five miles of cast iron mains in use. Galvanized iron used for service pipes. Two hundred families, or 50 per cent. of the population, use this supply.

HOWARD COUNTY.

Greentown.—A private plant has recently been installed in this town by the Delon & Co. Water Supply Co. The supply is a drilled well 100 or 125 feet deep of 4-inch galvanized iron pipe. The water is pumped into a covered reservoir 12 feet in diameter

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF MIDDLETOWN PUBLIC SUPPLY.

Parts in 100,000.

						.							İ			
						Ammonia.	onia.	Nitrogen as	gen		Solids.					
Гарога согу Упирогу	Date of Analysis.	Odor.	Color	Turbidity.	Sediment.	Free.	.bioaimud1A	Nitrates.	Vitrites.	Chlorine.	.latoT	Fixed.	Hardness.	Iron.	B. Coli.	Remarks
25	Sept. 16, 1906	None	0.0	None	None	0000	.0062	.2400	0000	2.6	48.1	88.3	22.3	8.	•	
) 	Gas formers present.	CHEMICAL ANALYSIS OF	SIS	WATER	FROM SYSTEM OF HUNTINGTON PUBLIC SUPPLY Parts in 100,000.	OF E	ILNUI	NGTO	N PU	BLIC	SUPP	LY.	-			
						Ammonia	onia.	Nitrogen	neg		Solids.		-			
Laboratory. Number.	Date of Analysis.	Odor.	Color	Turbidity.	Sediment.	.6914	.bioaimudl&	.аэзатіі И	Nitrites.	Chlorine.	.latoT	Fixed.	.ssenbraH	Iron.	B. Coli.	Remarks
340	May 17. 1906	None	5	V.8	Mob. reddish.	500	9700.	0090	0000	1.8	64.0	85.9	16.6	.035	T	Good.
346	May 21, 1906	None	0.0	V.8	S. earthy	.0034	000	0300	.0040	2.4	44.3	36.4	15.2	8.	1	Good.
349	May 24, 1906	S. veg	0.0	None	S. reddish	.000	9,00.	0300	0000	2.2	47.4	87.8	19.1	100.	•	Good.
8	May 26, 1906	V. s., foul	0.0	None	V.8.	.0002	0100	.0300	.0020	2.9	16.4	35.6	16.4	7 20.	1	Good.
366	May 28, 1906	Earthy	0.0	V.8	Mcb. reddish.	.0014	.0038	.6600	.0010	1.8	43.3	87.6	15.6	8	1	Good.
.869	0et. 22, 1906	V.8.	0.0	s	S. reddish 1050	.1050	.0020	0000	0100	18.8	757	8.73	28.5	97,	1	Bad.
*	a Not the some enemy as other some place	e complee					-		- -	-!	-	-			- .	

"Not the same supply as other samples.

by 12 feet in height. As yet there has been only one mile of mains laid and this is of galvanized iron. About 25 families are using the water as yet. There are also many drilled wells in the town.

HUNTINGTON COUNTY.

Andrews.—No public supply.

Huntington.—In 1890 a public supply of drilled wells was established for the city of Huntington by William McGrew. These wells are drilled to a depth of 100 feet through soil, blue clay, subsoil, clay, underlying strata stone. The water is pumped to a standpipe having a capacity of 500,000 gallons. At times the water has the smell and taste of mossy river water, but it is believed if the mains were thoroughly flushed the water would be all right. There are over 22 miles of distributing mains used, and they are of cast iron pipe with lead service pipes. One million gallons daily are consumed and 1,500 families, or 65 per cent., use the water.

Markle.—No public supply.

Roanoke.—Private wells furnish the supply for this town.

JACKSON COUNTY.

Brownstown.—In 1898 the Phoenix Construction Co., of Chicago, built for Brownstown their water supply. This consists of one dug well 15 feet in diameter and 25 feet deep, with a capacity of 400 gallons per minute in summer, and in winter it can not be exhausted at all. Water enters through strata of gravel 20 to 25 feet deep, which extends to White River, one mile distant. Water comes to within 12 feet of the surface in summer. The soil is sandy. The water is pumped into a reservoir holding 90,000 gallons. There are two miles of mains of cast iron with service pipes of galvanized iron. About 33 1-3 per cent. of the people, or one hundred families, use the water.

Seymour.—The Seymour Water Co., a private company, had its plant built in 1889 by W. E. McMillan. The water is taken from east fork of White River and pumped to a standpipe 16 feet in diameter by 100 feet high. The water shed includes all that portion of the state drained by east fork of White River above the intake of the water supply. No sewage or waste is received in the stream nearer than Columbus, thirty miles above.

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF BROWNSTOWN PUBLIC SUPPLY.

	Remarks	* Doubtful		
	₽. Coli.			
	Iron.	00.		
	Hardness.	20.(
Selids.	Fixed.	49.5		
Bel	fatoT	68.0		
	Chlorine.	3.10		
nego	Nitrites.	0000		
Nitrogen as	Nitrates.	0010 0060 1500 0010 3.10 68.0 49.5 20.0 .00		
onis.	.bionimndlA	.0050		
Ammonia	Free.	0100		
	Sediment.			
	Color Turbidity.	0.0 None		
	Color	0.0		
	Odor.	S. foul		
	Date of Analysis.	411 July 18, 1906		
	Laboratory Number.	411		

· Gas formers present.

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF MADISON PUBLIC SUPPLY.

Parts in 100,000.

	Remarks	.03 - Bad.		Bad.	
	.ttoo .a.	1	٠	<u>ي</u> ا	:
	Iron.		ģ		— Tr'00
	.sseabyaH	0.72	80	27.2	1
ide.	Fixed.	108.0	.80 17.1 14.3	8.5 131.8 104.6 27.2	1.4 22.7 18.1
Solids.	Total.	133.2	17.1	131.8	22.7
	Chlorine.	14.00	S,		
ogen 8	Nitrites.	0800	Tr'00	9,00	.0000
Ammonia. Nitrogen	Nitrates.	3000	9090	1.000	.0700
onia.	Albuminoid.	8900.	9600	.0048	7900
Ашп	¥100.	1020	2200.	.0310	9000
	Sediment.	8. red	Moh. clay0022 .0096 .0500 Tr'ce	Mch. red	Slight
	Color Turbidity.	0.0 V. S. red S. red J2204 J0068 2000 14.00 133.2 103.0 27.0	Mkd	0.0 V. s Meh. red0310 .0048 1.000 .0040	Slight
	Color	0.0	ı	0.0	Mud.
	Odor.	None	Earthy	None	Earthy
	Date of Analysis.	288 April 21, 1906	289 April 21, 1906	290 April 21, 1906	326 May 12, 1906
	Laboratory Number.	288	588	8	88

289 and 326. Ohlo river water. * Gas formers present.

The water is soft. Cast iron pipes 16 miles in length, with wrought iron service pipes. About 550 families, or from 20 to 30 per cent. of the people, use the supply. About 1,000,000 gallons daily are used. The water company has completed recently a filtration plant with a capacity sufficient to filter the entire supply for the city. This is known as the Continental-Jewel filtration system.

Crothersville.—No public supply.

JASPER COUNTY.

Remington.—The Remington water works, owned by the town and built in 1897, gets its supply from bored wells. There are three of these wells; one a 1-inch well, is 360 feet deep, 2-inch well is 250 feet deep, 3-inch well is 200. The soil is black loam, underlaid by slate, then hard rock, almost like marble. The water is pumped to a reservoir.

Rensselaer.—Rensselaer owns its own water supply, which was built in 1898 by the Chicago Bridge & Iron Co., and which consists of a drilled well. This is drilled in rock something over 800 feet deep. A tank holding 100,000 gallons and over 100 feet high has the water pumped to it. There are five miles of cast iron mains, with lead and galvanized iron service pipes. Two hundred and seventy-two families, or 50 per cent. of the population, use the supply, and the average daily consumption is 300,000 gallons. There are also a good many private wells in use, all drilled in the rock.

JAY COUNTY.

Dunkirk.—A system of four driven wells, built in 1894, constitutes the water supply of Dunkirk. These wells are driven 200 feet and the water is pumped to a reservoir. The water is limestone. About 10 miles of distributing mains of iron, with lead and galvanized iron service pipes, are in use. Three hundred and fifty families, or 60 per cent., use the supply.

Portland.—Portland owns a supply of artesian wells built in 1890 by Fred Bimel. These wells are 100 feet deep with a flow of 300,000 gallons daily. They are driven through clay soil into limestone. There are 15 miles of cast iron mains, with lead serv-

ice pipes, which are supplied by gravity. Three hundred thousand gallons are consumed daily. About 300 families, or 50 per cent., use the water. There are also private wells in use.

Redkey.—No public supply.

JEFFERSON COUNTY.

Madison.—This city owns its own public water supply, built in 1871, and which gets its supply from the Ohio River and five wells. The current of the river is two miles per hour. The wells are bored, average depth being 100 feet, through fine sand all the way. The supply is good, though hard. The water is pumped to a reservoir 80 feet in diameter and 20 feet deep with a capacity of 720,000 gallons. Twenty miles of distributing mains of cast iron, with iron and lead service pipes, are used, and 1,100,000 gallons are consumed daily. Six hundred and fifty families, or 95 per cent., of the people use the supply.

Brooksburg.—Supply is from private cisterns.

JENNINGS COUNTY.

Vernon.—The town of Vernon owns its public supply, which was built in 1893, and which gets its water from the Muscatatuck Creek. The watershed is from 25 to 50 square miles. The water is pumped to a standpipe eight feet in diameter and 75 feet high. The water is soft. Two miles of cast iron mains, with cast iron service pipes, are in use. Eighty families, or 60 per cent. of the people, use about 20,000 gallons daily. None of the people use the water for drinking or domestic purposes, as that is supplied by private cisterns.

North Vernon.—This town built its own public supply in 1892 and gets the supply from the north fork of the Muscatatuck River and also from numerous springs. The watershed area is 15 miles long and two miles wide. Fifty per cent. is cleared. The water is pumped to a standpipe, which holds 90,000 gallons. The water is soft. Six miles of cast iron distributing mains are used with cast iron service pipes. Three hundred and fifty families, or 50 per cent. of the population, use the supply, and 250,000 gallons daily are used. The plant was built by the Bohen Engineering Co., Cincinnati.

JOHNSON COUNTY.

Edinburg.—In 1893 Edinburg had built for the town a dug well, Stevens & Bedwards, contractors, Logansport, Ind., building the same. This well is 20 feet deep and 16 feet wide, and dug in a gravel bed. It is walled with an 18-inch wall of hard brick laid in cement, gravel bottom. The water ordinarily stands about 10 feet in the well, but with the pump running continuously the water stands about four feet in the well. It is pumped to a standpipe having a capacity of 42,500 gallons. Water is hard. Four-inch, 6-inch, 8-inch and 10-inch glazed iron pipes are used for the four and a half miles of distributing mains; galvanized iron is used for service pipes. The supply is used by 125 families, or about 33 per cent. of the population, and 169,205 gallons are consumed daily.

Franklin.—The Franklin Water & Light Co., owned by the city and built in 1890, furnishes the water supply for this town. The supply is from bored wells 150 to 200 feet deep with the water pumped to a standpipe and reservoir, the capacity of the standpipe being 12,000 gallons. At times the water develops a smell and taste like pond water. The supply is hard. Cast iron mains eight miles in length, with galvanized iron service pipes, supply the 275,000 gallons daily, which is used by 50 per cent. of the people. Private wells and cisterns are also used.

Greenwood.—The Citizens' Water & Light Co., a private company, built three years ago, furnishes Greenwood with its public water supply. The water is from an 8-inch cased drilled well 68 feet deep, which is pumped into the mains. There are three and a half miles of cast iron distributing mains, the service pipes of which are of galvanized iron and lead. There are about 20 families, or 5 per cent. of the people, using this supply, and 50,000 gallons are used daily for all purposes. Nearly all the families have their own wells.

KNOX COUNTY.

Vincennes.—The Vincennes Water Supply Co., a private corporation, built in 1886 by S. R. Bullock & Co., of New York, gets its supply from the Wabash River. The water is pumped to a standpipe after being filtered, the capacity of the standpipe being 600,000 gallons. The distributing mains are of cast iron,

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF GREENWOOD PUBLIC SUPPLY.

Color Turbidity.
0.0 None

. Gas formers present.

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF VINCENNES PUBLIC SUPPLY.

Parts in 100,000.

	Hardnoss. To B. Coli. B. B. B.	None 5- V.s V.s V.s 0.064 .0128 .1000 .0003 1.0 18.8 16.0 5.0 .00 - Geod.
Solids.	Fixed.	16.0
oč	Total.	18.8
	Chlorine.	1.0
Ammonia. Nitrogen	Mitrites.	000
Nit.	Nitrates.	.100
nonia	AlbamfandiA.	.0.
Αmı	.eer3	900
	Sediment.	Λ.8
	Color Turbidity. Sediment.	Ψ. Δ.
	Color	-
	Odor.	None
	Date of Analysis	261 April 5, 1906
	Laboratory Number.	158

and enameled, there being 18 miles of mains in use. The service pipes are galvanized iron. Three hundred families, or 10 per cent. of the population, use this supply, and the average daily consumption is 800,000 gallons. At least 90 per cent. of the people use the water from driven wells in their yards.

KOSCIUSKO COUNTY.

Claypool.—No public supply.

Etna Green.—No public supply.

Leesburg.—Private driven wells furnish the supply of this town.

Mentone.—Dug, driven and bored wells furnish the water for this town. Some of it is of bad quality.

Milford.—Milford owns a system of wells built in 1902, which furnishes the public water for this town. There are four wells driven 408 feet to gravel and sand. The water is pumped to a standpipe. Over two miles of distributing mains of cast iron, with galvanized service pipes, are in use. Fifty-five families, or 25 per cent., use this supply.

Pierceton.—In 1897 this town had a tubular well built, eight inches in diameter, by the C. L. Olds Co., of Ft. Wayne. This well is 212 feet deep through soil, clay, gravel and sand. It is pumped into a supply tank with a capacity of 500 barrels. Cast iron pipe is used for the distributing mains, of which there are about two miles, and gas and lead pipe are used for service pipes. Seventy-five per cent. of the population use the supply and about 15,000 to 20,000 gallons daily are used.

Silver Lake.—No public supply.

Warsaw.—A private company, called the Warsaw Water Works Company, furnishes the supply for Warsaw. The water is taken from a small lake about 100 acres in area with a sandy and marshy bottom. The watershed is about 300 acres with residences half way around, farm and marsh rest of the way. There is a standpipe, but it is seldom used, though it is full at all times. The water is pumped by direct pressure. The water develops a fishy taste and smell, and at times of decaying growths. Six miles of mains of cast iron, with galvanized iron service pipes, are used. There are 725 subscribers for this supply, or about 25 per

13-Bd. of Health.

CHEMICAL ANALYSIS OF WATER PROM SYSTEM OF WARSAW PUBLIC SUPPLY.

	rk 	,i
	Romarks	Good
	B. Coll.	
	Iron.	.0420
	Hardness.	.300420 - Good.
Solids.	Fixed.	<u>:</u>
80	.latoT	
	Oblorine.	30
negen	.aesirsiN	1000
Nitrogen as	Nitrates.	0000
onia.	.blonimudlA	0110
Ammonia.	Free.	0100.
	Slight0010 .0110 .0000 .0001	
	Color Tarbidity. Sediment.	.20 Slight
	Color	.20
	Odor.	S. sarthy
	Date of Analysis.	Oct. 3, 1906
	Valentatory	37

cent. About 1,000,000 gallons per day are used. All drinking or water for domestic use is from private wells, as the public supply is not fit.

LAGRANGE COUNTY.

Lagrange.—Lagrange owns and operates its public water supply, which was built in 1893 by Gordon Co., Hamilton, O. This consists of six wells, average depth 90 feet, soil glacial drift with reservoir under three or more clay strata. These wells are bored and pipes driven in bore with perfect plugging. The water is pumped direct into the mains, of which there are four and one-half miles. The mains are of cast iron, with galvanized iron service pipes. There are 230 families and 50 business houses, or 55 per cent. of the population, using the supply. These wells are supposed to be bored into a large lake or reservoir which is struck at 90 feet. The water is very abundant and potable.

Wolcottville.-No public supply.

LAKE COUNTY.

Crown Point.—In 1895 and 1896 the Seckner Contracting Co. built a system of wells for Crown Point. These wells are of sixinch pipe and are 81, 75, 69 and 57 feet. The soil is clay and water sand. This water is pumped to a reservoir and then to a standpipe. The standpipe is 12×100 feet and the reservoir is 8×10 feet. The water is hard. Six miles of mains are used of cast iron. The service pipes are galvanized iron and lead. About 40 per cent. of the town use the water and 100,000 gallons per day are consumed. Many private wells are also used.

East Chicago.—In 1894 the city of East Chicago built their public system. This has been in the hands of a receiver since November, 1903. The water is from Lake Michigan and is pumped to a standpipe 16 feet in diameter and 95 feet high. The lake receives waste from the Standard Oil Company's plant at Whiting. The water tastes and smells of petroleum and decayed organic matter and is soft. Twenty-five miles of cast iron mains, with lead and galvanized iron service pipes, are used. Fifteen hundred to 1,600 families, or 95 per cent. of the population, use this supply, and 3,000,000 gallons daily are consumed.

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF HOBART PUBLIC SUPPLY.

						Amm	Ammonia	Nitrogen as	gen		Solids.	de.				
Laboratory	Date of Analysis.	Odor.	Color	Color Turbidity.	Sediment.	.еетЯ	.bionimud[A	Nitrates.	Nitrites.	Chlorine.	.fatoT	Fixed.	Hardness.	Iron.	B. Coli.	Remarks
66	369 June 1, 1906 S. oily	8. oily	٦	5- None V. s. red0120	V. s. red	.0120	2110.	.5000 .0180		8.6	37.2 27.5		4.8	89.		Bad.
370	June 1, 1906	Earthy	2	s	Ex. earthy0018	8100	.0154 .4500		9000	2.7	83.9	88.0	8.7	훵	٠	Bad.
371	371 June 1, 1906	Earthy	2	V.8	V. s. earthy0054 .0128 .3000	.005	.0128	3000	.0040	2.4 32.9		8.8	8 6	910.	1	Bad.
372	372 June 1, 1906	S. earthy	5	5- None	Mch. red 5090 .0150 5300	0600	.0150	2300	.0200	3.4	39.8 938.9		0.6	910.	1	Bad.
873	373 June 1, 1906 S. earthy	S. earthy	٢	5- S Ex. red0020 .0190 .5000 .0002	Ex. red	.0020	0100	2000	2000	8.4	3.4 39.1	27.0	9.0	Ş	1	Bad.
874	374 June 1, 1906 Earthy	Earthy	١		Mkd Ex. earthy0014 .0270 .5200 .0003	.0014	0220	.6200		6.5	2.5 36.7 27.3	27.3	90	ક	ı	Bad.

* Gas formers present.

Hammond.—Hammond owns its own public supply, which was built in 1892 by the Lake Water Co. The source of the supply is Lake Michigan. The lake receives sewage, etc., from South Chicago, Ill. The water is pumped direct from the lake into the mains, of which there are from 65 to 67 miles. There is an odor and taste of petroleum from the Standard Oil Co. at Whiting. The mains and service pipes are of iron. The entire population uses this supply and about 6,000,000 gallons per day are consumed.

Hobart.—The supply of Hobart is from wells which were built by John P. Dales. These wells are dug and driven through subsoil, and the water is pumped to a standpipe. There are four miles of cast iron mains, 8-inch, 6-inch and 4-inch, and 115 families use the supply, or 35 per cent. of the population. Twenty-two thousand gallons per day are used. The standpipe holds 56,000 gallons.

Lowell.—Lowell owns an 8-inch bored well 187 feet deep, which was built for the town in 1898 by the John P. Dales Co., of Chicago. The well is bored 80 feet through solid rock, and the water rises to within five feet of the surface. The capacity of the lift pump is 500,000 gallons per day. This water is pumped to a standpipe 100 feet high and 20 feet in diameter with a capacity of 80,000 gallons. At times the water develops an unpleasant odor and taste. The supply is soft. Cast iron mains four miles in extent and of 4-inch, 6-inch and 8-inch pipe distribute the water. The service pipes are ¾-inch gas pipe. Two hundred and forty families, or 70 per cent., use the supply.

Whiting.—The Standard Oil Co. built a plant at Whiting about 15 years ago, and still own it. The water is taken from Lake Michigan and is supplied by direct pressure. Occasionally the water develops an oily taste. Ten miles of mains are used, these and the service pipes both being of iron. The entire population, probably from 1,000 to 1,200 people, use the supply, and from 500,000 to 1,000,000 gallons per day are used.

LAPORTE COUNTY.

Laporte.—In 1870 the city of Laporte built its public water supply. The water is obtained from Pine and Stone lakes with a large well and pumps five miles east in Little Kankakee bottom.

The area of the two lakes is about one and a half square miles, depth of the lakes is estimated at 12 feet, with places 50 feet deep, sandy bottom mostly. The watershed area is about four square miles, one-fourth wooded and three-fourths cleared, with There are many summer cottages on 400 inhabitants thereon. these lakes and picnic parties are held there often. The well of the Little Kankakee is sunk at the foot of the eastern slope, upon the marsh, and is of brick. It is 30 feet in diameter, 25 feet deep and is covered. The bottom is sand. This is pumped by electricity, which is generated at the pumping station at Laporte. water is distributed from the reservoir by Nordyke pumps. reservoir is part of Lily Lake fenced off and is about 60 feet in diameter and five feet deep. The water is hard and the water from the well has considerable mineral salts in it. Cast iron is used for the mains and wrought iron for the service pipes. One million gallons a day are consumed, and about 50 per cent. of the population use the water, but it is not used for drinking or domestic purposes as that supply is all from private wells.

Michigan City.—The Michigan City Water Co. was established in 1888 and the city now controls it and owns most of the stock. The state also has a water plant for supplying the State Prison. The water is taken from Lake Michigan, and is supplied by direct pressure. At times the water develops an unpleasant odor and taste. It is soft, and there are 18 miles of mains used. These are of cast iron, and the service pipes are iron and lead. About 1,300 families, or 25 per cent. of the population, use the supply, and 2.700,000 gallons per day are consumed. There are many private wells used, these varying from 15 to 50 feet. intake is at a depth of about 42 feet, not entirely below the depth of driftwood. It is also at the distance from the shore where slush ice is common and often the current takes the sewage from the city at least into the neighborhood of the intake. But when the conditions are such as were evidently contemplated when the plant was built, pure water is obtained.

Westville.—No public water supply.

LAWRENCE COUNTY.

Bedford.—This city owns its water plant, which was built in 1892. The supply is taken from the east fork of White River, and is pumped to a standpipe having a capacity of 36,000 gallons.

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF MICHIGAN CITY PUBLIC SUPPLY.

	•					Ammonia.		Nitrogen as		× ×	Solids.				
Гаротаtогу Ипшрет.	Date of Analysis.	Odor.	Color	Color Turbidity.	Sediment.	Ķ100·	.bionimndIA	Nitratos. Nitritos.	Chlorine.	.fatoT	Fixed.	Hardness.	Iron.	B. Coli.	Remarks
201	201 Feb. 5, 1906	None		Slight	0.0 Slight None0000 .0050 .0060 .0008 .60 17.0 13.3 5.4 .00 — Good.	0600;	9 0900	000	.60	2.71 O	13.3	5.4	8.	Ī	Good.

CHEMICAL ANALYSIS OF WATER FROM PUBLIC WELLS AT BEDFORD.

Parts in 100,000.

					:	Amm	Ammonis.	Nitrogen as	Ren		Solids.					
Trotarodad .redmn M	Date of Analysis.	Odor.	Celor	Color Turbidity.	Sediment.	Free.	.bionimudlA	.setattiN	Mitrites.	Chlorine.	.fatoT	Fixed.	.ssenbraH	Iron.	B. Coll.	Remarks
949	646 Oct. 12, 1906	None	0.0	0.0 V.s V.s V.s 0010 0020 1200 0020 15.20 84.0 60.7 28.0	V. 8	0000	0000	1200	0000	5.20	0.14	30.7		- 00.	1	Bad.
414	647 Oct. 12, 1906	None	9	V. 8.	S. reddish	900	7000	.000	8000	4.40	56.2	H.0.	9.0	\$	1	Good.
83	658 Oct. 16, 1906	None	0.0	Slight	Mch. reddish. 0010 .0024 .0400 .0010 11.2 80.0 59.0	.0010	7200	.0400	0000	2	0.08	30.08	84.6	ei.	1	Bad.
629	659 Oct. 16, 1906 None	None		0.0 Much	Mkd.reddish. 0060 .0034 6000 .0020 16.9	9000	1900.	9000	0000	6.9	92.7 64.2	31.2	28.0	ę	1	Bad.

659. East side square. 658. West side square. 647. Sixteenth street. 646. North side square.

The water is soft and there are 10 miles of distributing mains. These mains are of cast and wrought iron and the service pipes are galvanized iron. Four hundred families, or 25 per cent., use the water, and 1,500,000 gallons daily are consumed. The water is not filtered and is not used for drinking purposes except by very few. Private wells furnish most of the drinking water.

Mitchell.—Bored and dug well's furnish the supply for this town.

Oolitic.—No public supply.

MADISON COUNTY.

Alexandria.—In 1894 the Segner Contracting Co. built a system of wells for Alexandria. These wells are drilled 300 to 900 feet deep, and one is a flowing well, which is connected with the pumping station by common iron pipe, but it is to be replaced with wood pipes. The water is pumped to a standpipe with a capacity of 235,000 gallons. The water is hard and at times has a slight taste of iron. About four and a half miles of cast iron distributing mains are used, with galvanized wrought iron service pipes. About 800 families use this supply and the average daily consumption is 500,000 gallons. There are also many private wells.

Anderson.—Eleven or twelve years ago the city of Anderson built a public water supply, which gets its water from White River. This stream is very variable, volume indefinite, slow current, shallow; no sewage goes in the stream within three miles above the intake of the supply at present. The water is supplied by direct pressure from clear well. There are thirty-one miles of distributing mains of standard cast iron with lead and galvanized iron service pipes. About 2,100 taps are used, or about 50 per cent. of the people use the water, and the average amount used daily is 2,000,000 gallons. There are also many private wells. A mechanical filter plant has been installed recently and is doing good work. During hot weather a grassy odor was noticeable in the raw river water, but is not in the filtered.

Elwood.—The Elwood Water Co., a private company, built in 1891, furnishes Elwood with its public water supply. The system is one of driven wells ranging from 100 to 175 feet in depth and furnishing from 15,000 to 20,000 gallons per day. The soil

CHEMICAL ANALYSIS OF WATER FROM PUBLIC WELLS AT MITCHELL.

						Ammonia. Nitrogen	onia.	Nitro	gen		Solide.	4				
Laboratory Number.	Date of Analysis.	Odor.	Color	Color Tarbidity. Sediment.	Sediment.	Free.	.bionimudiA	Nitrates.	Nitrites.	Chlorine.	.fatoT	Fixed.	Hardness.	Iron.	B. Coll.	Remarks
956	566 Sept. 12, 1906	None	0.0	0.0 None	V.s	4100.	4200	1,000	.0003	6.80	94.5	42.8	21.8	0.0	+	Bad.
201	567 Sept. 12, 1906	None		0.0 V. S	S. earthy 0030 .0060 .8000 .0025 8.20 61.4 41.4 21.2 0.0 + Bad.	9000	9900	9008	9000	8.20	4.19	7:17	21.2	0.0	+	Bad.
803	603 Sept. 20, 1006 None	None	0.0	None	0.0 None V. s 0010 .0060 .1200 .0020 25.10 97.8 75 8 21.6 0.0 + Bad.	.0010	900	1200	0800	92.30	97.6	8 92	21.6	9	+	Bad.

506. "Bigg's" public well. 567. Corner Sixth and Main. 603. Location unknown.

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF INDIANAPOLIS PUBLIC SUPPLY.

Parts in 100,000.

Solide.	Fixed. Hardness. Iron. B. Coli. Renark	5 43.4 13.8 .00 - Good.
	.fatoT	25.
	Chlorine.	00 10
Togen as	Witrites.	000.
ž	Nitrates.	0,0
Ammonia.	.bionimudlA	.0072
Amn	£100.	.0118
	Sedinent.	None
	Color Turbidity.	None
	Color	None
_	Odor.	S. earthy
	Date of Analysis.	378 June 1, 1906 S. earthy None None None None 0118 .0072 .0 '00 .0000 10.2 58.5 48.4 13.3
	Violatora Namber.	378

is loose subsoil, and hardpan with an underlying strata of gravel. The water is pumped into the mains except in case of fire, when water from a reservoir is forced into the mains. At some of the hydrants there is a musty odor. Iron mains are used 17 miles in extent and iron and lead service pipes are used. Seven hundred or 800 families, or five or six per cent. of the population, use the supply and about 100,000 gallons per day are consumed. Many private wells are used, these generally being shallow or from 10 to 20 feet in depth.

Frankton.—In the fall of 1899 the W. H. Wheeler Co. built for the town of Frankton a public system. This supply consists of a dug well 25 feet deep, dug in water bearing gravel. The water stands 11 or 12 feet in the well, which is 20 feet in diameter. The water is hard. Three miles of mains of cast iron are used, with iron service pipes. There are about 60 or 75 taps in use, but less than one per cent. use this water for drinking, the drinking water coming from private wells. The public supply is used mostly for sprinkling lawns and streets, and 50,000 gallons daily are used.

Ingalls.-No public supply.

Lapel.—No public supply.

Orestes.-No public supply.

Pendleton.—All private wells, mostly drilled from 40 to 150 feet.

Perkinsville.—No public supply.

Summitville.—The Summitville Water Co., built in 1902 and owned by the town, furnishes the public water supply. The supply is from a drilled well 400 feet deep, drilled through Trenton rock into shale. The water at times develops an unpleasant odor and taste and is sometimes the color of brick. It is hard. Three miles of cast iron mains, with galvanized iron service pipes, are in use. Ninety families, or about 30 per cent of the population, use the water.

MARION COUNTY.

Broad Ripple.—No public supply. All water used is from private wells.

Indianapolis.—The city of Indianapolis is supplied with water by the Indianapolis Water Co., a private company, built in 1870. The supply is obtained from deep wells and a canal from White River, which is dammed about 10 miles above the intake, thus providing a large storage reservoir. This reservoir or lake is largely frequented by visitors and during the summer season thousands visit the park along its shores each day. Canoeing and boating is not prohibited and all waste from the adjacent park flows into the river: The stream also receives sewage in large quantities from above the intake. The average depth of the wells is 300 feet, capacity 18,000,000 gallons every 24 hours; and the capacity of the filtration system is 24,000,000 gallons per 24 hours. The water is supplied by direct pressure system. There are 270 miles of mains used in distributing the water, and these are of cast iron with lead pipe used in the streets. There are 16,000 taps in service, and including factories and schools, etc., the number is estimated at 100,000 using the supply. The city owns and operates water works in that part of the city called Brightwood.

New Augusta.—Private wells supply this town. Southport.—No public supply.

MARSHALL COUNTY.

Argos.—In 1897 this town built a public supply, which consists of a well driven through soil, sand, subsoil, clay, underlying strata of blue clay. The water is pumped to a cistern which is entirely enclosed. Its capacity is 800 barrels. Cast iron is used for the mains, of which there are five miles, and galvanized iron is used for service pipes. Forty or fifty families, or 10 per cent., use the supply, and about 30,000 gallons per day are consumed. There are also many private wells driven about 20 to 30 feet.

Bourbon.—The Union Water, Light & Power Co., a private concern, built in 1899 by Duke M. Farson, of Chicago, furnishes Bourbon with its public supply. This consists of bored wells 8 inches in diameter and 150 feet deep. The water is pumped to a standard cast iron pipes are used for the mains, with galvanized iron for service pipes. About 25 families use the supply for all purposes and about 100 for sprinkling, or four per cent. for domestic purposes and 10 per cent. for all purposes. An average of 30,000 gallons per day is used. There are many private wells in this town. There is also a reservoir with a capacity of 20,000

gallons, with a force pump which is used for fire purposes. This is separate from the standpipe.

Bremen.—Twelve years ago the town of Bremen built a public system of wells. There are six of these wells bored to a depth of 65 feet, through soil, muck, quicksand, clay, hard pan, then limestone or slatey layer into gravel. The water is pumped to a standpipe holding 2,700 barrels. This water is hard. Iron and galvanized iron service pipes are used for the five miles of distributing mains. Two hundred thousand gallons daily are consumed and 90 per cent. of the population use the supply. There are many private wells in use.

Plymouth.—This town owns a system of flowing wells from 40 to 200 feet deep, which were built about 10 years ago. The water is supplied by direct pressure and contains sulphur, iron and magnesia. The mains are of iron and some wood pipes are used. The service pipes are of iron. About 150,000 gallons daily are consumed.

MARTIN COUNTY.

· Loogootee.—No public supply. Shoals.—No public supply.

MIAMI COUNTY.

Amboy.—Private drilled wells supply this town.

Bunker Hill.—No public supply.

Converse.—In 1892 the town of Converse had built a system of drilled well's 240 feet deep. These wells are drilled through clay, soil, subsoil, gravel, shale and rock. The water is pumped to a tank on steel trestle, with a capacity of 30,000 gallons. There is no odor or unpleasant taste, but it leaves a red deposit. The water is hard. Cast iron is used for the two miles of mains, and galvanized iron is used for service pipes. About 180 families use the supply, or 75 per cent., and 135,000 gallons daily are used for all purposes.

Macy.-No public supply.

Peru.—The city of Peru built a system of drilled wells in 1878. These wells are about 470 feet in depth and are drilled in limestone. Part of the water is pumped to a reservoir. The water is

hard limestone. There are about 25 miles of distributing mains, and these are of cast iron with lead service pipes. Probably 1,700 families use the supply, and 1,500,000 gallons daily are consumed. There are many private well used.

MONROE COUNTY.

Bloomington.—The Bloomington Water Works Co., built in 1893 for the city, gets its supply from a pond which is 32 acres in area and 15 feet deep, with a mud bottom. The watershed is 1½ miles square and is both wooded and cleared, with three families living thereon. The water is pumped to a reservoir and from there is pumped direct into the mains. The water is filtered through a bed 60 feet square and 8 feet deep, filled with 3 feet of sand and gravel. Fourteen miles of mains are used, these consisting of cast iron pipes for distributing mains and galvanized wrought iron for service pipes. Seven hundred families, or 40 per cent. of the population, use this supply, and probably 60 per cent. use cistern water. About 30 per cent. use water filtered through charcoal and gravel.

Ellettsville.—No public supply.

MONTGOMERY COUNTY.

Alamo.—No public supply.

Crawfordsville.—The Crawfordsville Water & Light Co., built in 1885 by Commegys & Lewis, is owned by a private company. The supply is from springs and wells, the springs being 12 to 18 feet deep and the wells 50 to 200 feet deep. The wells are driven through soil, sand and gravel to a depth of 200 feet, then follows 400 feet of shale. The water is pumped to a standpipe from a reservoir, the standpipe being 16 feet in diameter by 175 feet high, and the reservoir is 12 feet deep and 80 feet in diameter. There are about 15 miles of cast iron mains, and wrought iron is used for the service pipes. About 500 families use the supply and 1,000,000 gallons are used daily for all purposes. There are many private wells also in use.

Darlington.—A private company owns and operates a supply for this town. The water is taken from a spring. Two miles of distributing mains are used, and these and the service pipes are of iron. Fifty families, or about 33½ per cent., use the supply. Many private wells are also used.

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF GRAWFORDSVILLE PUBLIC SUPPLY.

	, a	٠		•
	Remarks	Good.	Good.	Good
	B. coli.	:	<u>:</u>	<u>:</u>
	B. colf.	.10	8.	ᄚ.
	.ssenbraH	17.8	18.5	31.0
Solids.	Fixed.	42.1	43.1	41.5
Sol	Total.	55.5	90.0	8.8
	Chlorine.	1.10	1.20	8 .
rogen	Mitrites.	9000	9000	7000
Nitra	Nitrates.	0020	0100	0000
Ammonia. Nitrogen	Albuminoid.	9100.	.0048	.0140
Amm	Free.	0100	070	.0160
•	Sediment.	Mob. reddish.	Mcb. reddish.	Mch. reddish.
	Color Turbidity.	Slight	Slight	Slight
	Color	0.0	0.0	0.0
	Odor.	None	S. earthy 0.0 Slight Meh. reddish. 0040 .0048 .0100 .0005 1.20 60.0 43.1 18.5	None
	Date of Analysis.	390 June 18, 1906 None None 0.0 Slight Mach. reddish. 0016 .0016 .0006 1.10 55.5 42.1 17.8 .10 Good.	415 July 18, 1906	579 Sept. 15, 1906
	A	June	July	Sept.
	Терогатора. Теория И	390	415	679

CHEMICAL ANALYSIS OF WATER PROM SYSTEM OF MARTINSVILLE PUBLIC SUPPLY.

Parts in 100,000.

	•					Amm	Ammonia. Nitrogen	Nitro	gen .		Solids.	je.				
Number.	Date of Analysis.	Odor.	Color	Color Turbidity. Sodiment.	Sediment.	Free.	.bionimud[A	Nitrates.	Nitrites.	Chlorine.	latoT	Fixed.	Нагалова	I coli.		Remarks
<u></u>	9. October 11, 1905 None None None None None 3000 3010 4000 5001 1.50 87.9 27.5 3026 Good.	None	0.0	None	None	0000	0100	4000	1000	1.50	87.9	27.5		970.	. :	Good.

Ladoga.—No public supply.

Linden.—No public supply.

New Ross.—No public supply.

Waveland.—No public supply.

Waynetown.—No public supply.

Wingate.—Private wells furnish the supply for this town.

MORGAN COUNTY.

Martinsville.—In 1893 the town of Martinsville built a dug well 35 feet deep. The water is pumped direct into the mains, of which there are seven miles of cast iron. Eighty per cent. of the population use about 600,000 gallons daily. There are also many private wells in use.

Mooresville.—A private company called the Public Service Company furnishes Mooresville with its public supply. in 1904, this supply consists of two drilled wells. One is an 8-inch well bored 311 feet, but this is not in use. The other is 40 feet deep, then drilled through rock eight feet. This well is 14 feet in diameter, walled with brick and then an 8-inch space between the wall; and the clay is solidly concreted. This is walled down for 20 feet with the brick. Most of the water in this well rises from the bottom through drill holes and stands at a height of about 18 feet. The rate of the flow is about 150 gallons per minute. There are 31/4 miles of mains, and these are of cast iron with galvanized iron service pipes. About 78 families use the supply, or 18 per cent. of the population, and the average daily consumption is 15,000 gallons.

Paragon.—Driven wells furnish the supply for each family.

NEWTON COUNTY.

Brook.—No public supply.

Goodland.—Private wells bored and dug furnish the supply.

Kentland.—Kentland owns a well which was bored in 1895 for gas and is about 1,100 feet deep, with the water supply coming from a depth of about 300 feet. This is bored through black soil, clay subsoil and sand and clay. This water is pumped to a reservoir 20 feet in diameter and 20 feet high. The water has an unpleasant odor and taste of carbon bisulphide.

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF MOORESVILLE PUBLIC SUPPLY.

	Remarks	Good.
	C. Coli.	:
	Iron.	120
	Hardness.	20.3
de.	Fixed.	68.5
Solids.	.fatoT	108.4
	Chlorine.	9.4
gen	Nitrites.	1000
Ammonia. Nitrogen	Vitrates.	.6000
onia.	.bionimudIA	.0014
Amm	Free.	Tr'ce
	Sediment.	Considerable Tr'ce .0014 .6000 .0001 9.4 108.4 68.5 20.3 .120
	Turbidity.	Very pro- nounced
	Color	0.0
	. Odor.	None
	Date of Analysis.	124 November 22, 1905 None
	Laboratory Number.	124

CHEMICAL ANALYSIS OF WATER FROM PUBLIC WELLS AT GOODLAND.

Parts in 130,000.

Date of Analysis. Odor. Color Turbidity. Sediment. Date of Analysis. Odor. Turbidity. Sediment. Date of Analysis. Color Turbidity. Sediment. Tree. Tries. Tries. Iron. Remar. Mittrates. Chlorine. Tries. Tries. Color. Tries. Color. Tries. Color. Col						Amm	onia.	Aumonia. Nitrogen	ų.		Solids.				
167 December 27, 1905 None 0.0 S. S. earthy .013 186 December 27, 1905 None 0.0 V. s. S. earthy .014	e of Analysis.		Color	Tarbidity.	Sediment.	Free.	.bionimudlA	Nitrates.	Nitrites. Chlorine.	Total.	Fixed.	Hardness.	Iron.	B. Coli.	Remarks
166 December 27, 1905. None. 0.0 V.s. S. earthy	ber 27, 1905	one	0.0	S	S. earthy	.0134	0100	0000 T1	, ce 3.	2 44	8.	4 17.	98.	_ <u>:</u>	Good.
	ber 27, 1905 N.	опе	0.0	V. 8	S. earthy	.0140	100.	0.000	900	2	7.	8 17.	<u>*</u>	<u>:</u>	. Good.

167, City Well No. 1. 166, City Well No. 2.

and is soft. Two miles of iron mains, with galvanized service pipes, are used. Eighty-five families use the water, or about 40 per cent. There are also private wells in the town. The water from the hydrants varies in color from milky to almost black.

Morocco.—Private wells bored to limestone rock furnish this town with its supply.

Mount Ayr.—Private wells bored from 50 to 200 feet supply the water for public use in Mount Ayr.

NOBLE COUNTY.

Albion.—In 1895 this town had Olds, of Ft. Wayne, build for it a system of driven wells. These wells are 97 feet deep and are driven through soil, black loam, subsoil, blue clay; underlying strata, gravel. The water is pumped by direct pressure and is hard. Iron pipes are used for the mains and service pipes and about eight miles of distributing mains are in use. Two hundred and fifty families, or 60 per cent. of the population, use this supply, and about 50,000 gallons daily are used.

Avilla.—Avilla owns its own water supply, which it built some time ago; this consists of a drilled well 100 feet deep, the water from which is pumped to a reservoir 18 feet high by 18 feet in diameter. The watershed is 1½ square miles cleared and with 750 inhabitants. The supply is slightly hard and flows through 1¾ miles of distributing mains. These mains are of 4-inch iron pipes with ¾-inch galvanized iron service pipes. Seventy-five families use the water, and an average of 500 gallons daily is used. Bored wells owned by the people are also used.

Ligonier.—Sixteen years ago Ligonier built a public water supply, and in 1904 and 1905 a new plant was installed. This supply is of driven wells, four in number, 65 feet, 126 feet, 82 feet and 92 feet in depth. These wells are driven through upper soil, sand and gravel, 10 feet deep, blue clay about 30 feet deep, then water gravel. About 170 feet is sandstone and beyond that fine sheet water. The water is pumped to a tank that holds 100,000 gallons. Cast iron is used for the distributing mains, and galvanized wrought iron is used for service pipes. Nine miles of mains are used to distribute the water, and 350 taps are used, or about 50 per cent. of the people use the supply, and an average of 200,000 gallons per day is used.

14-Bd. of Health.

CHEMICAL ANALYSIS OF WATER PROM SYSTEM LIGONIER PUBLIC SUPPLY.

	Remarks	Good.
	B. Coli.	
	Iron.	86.
	Hardness.	26.8 28.5
ds.	Fixed.	.4 82.0 26.8 28.5 .2 85.8 32.7
Solids.	.fatoT	.2 35.8
	Chlorine.	₹ 61
Ammonia. Nitrogen	Nitrites.	9000
Nitro	Nitrates.	0000
onia.	.bionimud[A	.0034
Amm	.ee14	.0104
	Sediment.	0.0 None V. s. reddish .0104 .0014 .0000 .0005 0.4 Marked Cons. lime0024 .0034 .0000 .0000
	Color Turbidity.	0.0 None
	Color	
	Odor.	None
٠	Date of Analysis.	720 October 27, 1906
	Laboratory Number.	§ 38

CHEMICAL ANALYSIS OF WATER FROM PUBLIC WELL AT ORLEANS.

Parts in 100,000.

	Remarks	.20 - Good.
	B. Coli.	
	Iron.	
	Hardness.	0.83
ide.	Fixed.	86.4
Solids.	LatoT.	101.5
	Chlorine.	1.60
negen 8	Nitrites.	2200.
Nitr	Nitrates.	.0200
onia.	bionimudlA	9100.
Ammonia. Nitrogen	F100.	0040 .0016 .0200 .0022 1.60 101.5 86.4 28.0
	Sediment.	Consid.
	Color Turbidity.	Mkd.
	Color	0.0
	Odor.	V. 8.
	Date of Analysis.	529 Aug. 25, 1906
	Laboratory.	88

Kendallville.—The town of Kendallville installed a public water supply in 1887, which consists of driven wells, ranging in depth from 50 to 76 feet. The wells are driven through hard pan at 30 feet to water gravel. The water is supplied by direct pressure. This town is located at the source of the Elkhart River watershed. Ten miles of cast iron mains, with galvanized iron and lead service pipes, are in use. Every 24 hours 300,000 gallons of water are pumped, and 450 families, or 50 per cent. of the people, use the supply.

OHIO COUNTY.

Rising Sun.—Water from cisterns and driven wells supply this town with its water.

ORANGE COUNTY.

French Lick.—A public supply is being installed in this town which will get its supply from a stream 3x3 feet square. The hotels use the mineral water which comes from numerous springs, and also water which is pumped from French Lick Creek and is filtered by private filters.

Orleans.—No public supply.

Paoli.—In 1895 a private company built a water supply in Paoli which was afterward sold to the town. The source of the supply is Lick Creek, which is inexhaustible and of good quality. This is pumped to a reservoir. Cast iron is used for the mains, and galvanized and black iron for the service pipes. One hundred families use this water, or about 40 per cent. There are also several private cisterns used and several public wells that are deep.

West Baden.—The West Baden Springs Co., a private company built 12 years ago, furnishes the supply for this town. The source of the water is Lost River, a stream the volume of which is unknown. The watershed is cleared land 6 square miles in area with no inhabitants. The reservoir holds 1,000,000 gallons and is 600 square feet in area and 10 feet deep. There are two miles of mains of cast iron pipe, with galvanized iron service pipes. Fifty families, or 50 per cent. of the population, use this supply. The water is soft.

OWEN COUNTY.

Gosport.—No public supply. Spencer.—No public supply.

PARKE COUNTY.

Diamond.—No public supply.

Rockville.—In 1903 Rockville established a public water supply for the business portion of the town, which consists of driven wells, 106 feet deep. Twenty-four hours' flow raises five feet of water in a tank 18 feet in diameter. The well is driven through hardpan. The water is pumped to a tank holding 34,000 gallons. Iron is used for the mains and service pipes and about one-half mile of distributing mains are used. The business portion of the town and a few families living in the business section are the only ones using the supply. This is only a small plant erected by the town to supply business houses, court house, jail, electric light plant, etc. The resident district is supplied entirely by wells.

Rosedale.—No public supply. Water is from cisterns and driven wells.

PERRY COUNTY.

Cannelton.—The Cannelton Water Works, a private corporation built about 12 years ago by W. W. Taylor, furnishes this town with its water supply. The source of the supply is the Ohio River and the water is pumped to a reservoir 150x100x20 feet. The water is soft. Four miles of distributing mains are used, these being of wood with galvanized iron service pipes. Two hundred families, or 50 per cent., use 25,000 gallons per day. The Secretary of the Board of Health reports that the water at times develops a very bad odor, and that the reservoir is nothing but a mud hole on the side of the hill, not protected in any way, and with a green scum over it most of the time.

Tell City.—Tell City owns a plant which was installed in 1902 and was built by A. C. Kennedy, of Rockport. The supply is from wells situated on the banks of the Ohio River, but water is said not to be derived from the river. The wells are 80 feet deep through soil, yellow clay, slate and gravel and sand. The water is pumped to a standpipe with a capacity of 110,000 gallons. There

are four or five miles of mains of iron used, with service pipes of galvanized iron. Fifty per cent. of the inhabitants use this supply.

Troy.—Private driven and dug wells furnish this town with its supply.

PIKE COUNTY.

Petersburg.—Petersburg owns a public water supply which was built in 1901, and which is called the American Light & Water Co. This supply is taken from White River, and this receives waste and sewage from all factories and cities on both forks above the intake in very large quantities. This water is pumped to a standpipe which holds 120,000 gallons. There is both an unpleasant odor, musty, and a bad taste. Five and a half miles of mains are used, these being of cast iron with galvanized service pipes. One hundred families, or 20 per cent. of the population, use the water, and 50,000 gallons per day are consumed. The schools are supplied with water from deep drilled wells.

Winslow.-No public supply.

PORTER COUNTY.

Chesterton.—Private wells and cisterns furnish the supply for this town.

Hebron.—No public supply.

Valparaiso.—The Valparaiso Home Water Co. furnishes the supply for this city. At present it is the property of a private company, but as soon as the city pays off the bonds against it, it will become the property of Valparaiso. The plant was built in 1886 by the Henry B. Smith Co., of Bay City, Mich. The water is taken from a lake two square miles in area and 25 feet deep, with loamy bottom. The watershed is eight square miles in area, with 50 inhabitants thereon in winter and 200 during the summer months. Picnic parties are held there frequently in the summer. This water is pumped by direct pressure. When water stands in the pipes in hot weather it develops an unpleasant odor and taste; it is soft. Thirteen miles of wood mains, with lead service pipes, are used. One thousand families, or 65 per cent, use the supply and 950,000 gallons are used daily. The greatest trouble experienced with this supply is to control the ground adjacent to the lake during the summer.

CHEMICAL ANALYSIS OF WATER PROM PUBLIC WELL AT CHESTERTON.

					Amm	Ammonia. Nitrogen	Nitro			Solids.					
	0dor.	Solor	Color Turbidity.	Sediment.	.991¾	.bioaimadlA	Nitrates.	Nitrites.	Chlorine.	.laioT	Fixed.	.886пртвН	Iron	B. Coll.	Remarks
303 April 30, 1906 No.	None	0.0	0.0 None None0014 .0024 .3000 .0008 3.00 46.7 38.5 11.8 S.tr.	None	100.	1200.	3000	8000	3.00	16.7	38.5	11.8 S	<u>.</u>		Good.

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF VALPARAISO PUBLIC SUPPLY.

Parts in 100,000.

	Remarks		- - -
	B. Coli.		1
	Iron.	0000	E .
	Hardness.	8.8	6 .
de	Fixed.	2.9	4.5
Solide	.faloT	.2.8	8.6
	Chlorine.	2.00	\$.
negen 8	Nitrites.	0000	900.
Nitr	Nitrates.	0000	.020
Ammonia. Nitrogen	AlbumimodlA.	0.0670	.0288
Amm	. 661Д	.0160	.0112
	Sediment.	Much fine0160 .0670 .0000 .0000 2.00 8.2 2.9 3.8 .0000	Con. floc
	Color Turbidity.	None	None
	Color	6.0	7.0
•	Odor.	None	Dec. veg
	Date of Analysis.	510 Aug. 25, 1906 None 5.0 None	511 Aug. 25, 1906 Dec. veg 7.0 None Con. floc 0112 .0238 .0200 .0003 .40 9.3 4.5 4.9 .01
	V101a10da.l	910	211

. Gas formers present.

POSEY COUNTY.

Cynthiana.—This town has three public wells two of which are drilled 180 feet deep; the other is a dug well, 40 feet deep. The schoolhouse well is drilled, but is hardly a success, as the water has been muddy at times. Most of the supply is from cisterns and dug wells.

Hensler.—No public supply.

Mt. Vernon.—The Mt. Vernon Water Works Co., a private concern, built in 1886, with a Deutch Gravity System Filter plant, added in 1903, controls the water supply for Mt. Vernon. The water is taken from the Ohio River. The nearest town above the intake is Henderson, Ky., which is 20 miles above. A standpipe is used with a capacity of 196,000 gallons and the supply is of soft water. Nine miles of distributing mains of cast iron, with lead and galvanized iron, are used in distributing the water to the 450 families using the supply. About 50 per cent. use the water, and 750,000 gallons daily are consumed. There are also many private wells used.

New Harmony.—The water supply for this town is from two private tanks, one owned by M. B. Pote, and which was built in 1895 for him by W. W. Robb; the other being owned by Arthur Dransfield, and built by himself five years ago. The water supply for these tanks is from driven wells about 35 feet deep, driven through sand 3 feet, hardpan two feet, fine white sand five feet, a 4-foot strata of coarse sticky gravel, with sand 10 feet, 2 feet of coarse gravel and then white sand. The water is pumped by gasoline engines to the wooden tanks holding 200 barrels and 350 barrels. The water is hard. A little over a mile of mains are used, with iron for the pipes and service pipes. Fifty families are using the water and about 1,000 barrels daily are consumed. Many driven wells are also owned by the people.

Poseyville.—No public water supply at present, but one is contemplated.

PULASKI COUNTY.

Francisville.—No public supply. Bored wells used.

Monterey.—No public supply.

Winamac.—No public supply. A few dug wells are used, but the majority are driven wells from 40 to 60 feet deep.

PUTNAM COUNTY.

Bainbridge.—No public supply. Town has four bored wells from 75 to 160 feet deep. Bainbridge is on the highest point on the Monon Railroad. Contiguous lands all cleared.

Greencastle.—The Greencastle Water Works Co., a private company built in 1887 by Bullock & Co., of New York, furnishes the supply for Greencastle. The water is taken from the Big Walnut stream, the source of which is in Boone County. The watershed is both cleared and wooded. The water is pumped to a standpipe 130 feet high and 30 feet in diameter. The water is medium. Cast iron mains with galvanized iron service pipes constitute the nine miles of distributing mains. Between 800 and 900 families, or 85 per cent., use the supply, and an average of 75,000 gallons per day are used. It is used by several railroads going through Greencastle and by mills. There are very few wells, say 3 per cent., the remainder use cistern water.

Roachdale.—No public supply. Russellville.—No public supply.

RANDOLPH COUNTY.

Farmland.—No public supply.

Lynn.—No public supply.

Parker.—No public supply.

Ridgeville.—No public supply.

Union City.—In 1873 this city built a system of wells for furnishing the public water supply. Two of these wells are dug to a depth of 35 feet, with a capacity of 275,000 gallons, dug through sand and gravel; four wells are drilled through limestone, furnishing 500,000 gallons per minute, but these wells are only used when the dug wells are not sufficient, as in case of fire or drought. The water is pumped into mains with pressure sufficient for fire. Seventeen miles of mains of wood and iron, with lead service pipes, are used. Five hundred families, or 90 per cent., use this supply, and the average daily consumption is 306,000 gallons. This supply is also used by Union City, Ohio.

Winchester.—The Citizens Water & Light Co., built by them in 1900, and which is a private company, furnishes the water supply for this town. The supply is obtained from drilled wells 200

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF GREENCASTLE PUBLIC SUPPLY.

						Amme.	Ammonia. Nitrogen	Nitro	Ten Ten		Solids.	<u>.</u>				
otarudad iedmr M	Date of Analysis.	Odor.	Color	Color Turbidity.	Sediment.	Free.	.bionimudlA	Nitrates.	Mitrites.	Chlorine.	.latoT	Fixed.	Hardness.	Iron.	B. Coll.	Remarks
266 April	286 April 5, 1906	None	٣	5- V. s S S S	88	•100.	.0164	1000	900	\$	6.8	9.	7	999	+	
293 April	21, 1906 None	Мове		0.0 None V. s	V. 8	0000	.0058	1000	0000	9:	31.1	0.73	12.0	0000	*	•
298 April	21, 1906	None	0.0	None	None0010 .0034 .1200 .0000	.0010	200	1200	900	8	.25 31.5 28.0 11.6 .015 *	.8.0	9.11	.015		
729 Oct.	30, 1906 None	None	0.0	0.0 V. s S. earthy 30.24 .0114 .0100 .0004	S. earthy	.0024	.0114	0100		8	.50 29.0 23.9 22.6	6.8	9.	020	:	:

*Gas formers present.

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF WINCHESTER PUBLIC SUPPLY.

Parts in 100,000.

			 			Amm	Ammonia. Nitrogen	Nitro	ren		Solids.					
Α .	Date of Analysis.	Odor.	Color	Color Turbidity.	Sediment.	F106.	.bioaiandlA	Nitrates.	Nitrites.	Chlorine.	.fatoT	Fixed.	Hardness.	Iron.	B. coli.	Remarke
ند	648 Oct. 12, 1906 None	None		0.0 None	None 1100. 0700. 0001.	.1100	02.00	0000	2000	æ	4.08	.8 39.4 30.2 33.1 Tr'ee	33.1	Tr'ce		Good.

feet deep and 10 inches in diameter. A brick reservoir is used, 20 feet deep and 20 feet in diameter, covered. The water is pumped through the mains by direct pressure. This supply is hard. Seven miles of iron mains and iron and lead service pipes are used. About 275 families, or 50 per cent., use 500,000 gallons per day.

RIPLEY COUNTY.

Batesville.—The Batesville Water Works Co., built in 1902, and owned by a private company, furnishes the water supply for this town. The supply is from ponds and a spring. is located in the Fair Grounds inside of the half-mile track; depth six or eight feet, with white clay bottom. There are also two small ponds connected to water works. The watershed is about 60 acres, partly wooded and with one family living on grounds. Picnic parties are frequent in summer and boating is allowed on the pond. The spring is 18 feet deep and supplies 30,-000 gallons of water per day: clay and sand bottom. This spring is dug. The water is pumped to a tank holding 50,000 gallons, and the water often develops an unpleasant taste and smell like that of swamp water. There are three miles of mains in use, these being of cast iron, with rod iron and lead for the service pipes. About 80 families use this supply and an average of 60,000 gallons per day are used.

Versailles.—No public supply.

RUSH COUNTY.

Carthage.—No public supply.

Rushville.—In 1896 Rushville had built by Howe, of Indianapolis, deep tubular wells. The water from these wells is pumped to a reservoir holding 400,000 gallons and about 32 feet in diameter. This water is hard. Cast iron and galvanized iron compose the 14 miles of mains and service pipes. Four hundred families use this water, or 50 per cent., and the average daily consumption is 1,500,000 gallons.

SCOTT COUNTY.

Scottsburg.—No public supply. The wells are mostly bored through dark soil, subsoil clay, with strata of quicksand. A public supply will soon be built.

SHELBY COUNTY.

Morristown.—No public supply. One well, 80 feet deep, supplies a good many of the inhabitants living in that section.

Shelbyville.—The Citizens Water & Light Co., built 21 years ago by Commeygs & Lewis, is owned by a private company. The supply is from driven wells from 56 to 75 feet deep in gravel. The supply is pumped direct to mains, 15 miles of which are used, these being cast iron. Three hundred families use this, or about 10 per cent. of the population. The average daily consumption is 1,500,000 gallons.

SPENCER COUNTY.

Chrisney.—No public supply.

Dale.—No public supply.

Grand View.—No public supply.

Rockport.—A private company, called the Rockport Water Works Co., built in 1877 by A. H. Kennedy, and getting the supply from deep wells, furnishes this town with its public water supply. These wells are 90 feet deep through hardpan, about 20 feet from the surface, into gravel. The water is pumped to standpipe holding 60,000 gallons. This water is hard. Six miles of distributing mains are used, these being of cast iron with galvanized iron service pipes. Nearly all the population uses the supply and about 450 taps, consuming daily 250,000 gallons, are in use.

St. Meinrad.—In 1874 this town built a supply consisting of well and spring. The spring is piped into the well, going about 300 feet under ground. The land is all cleared on the watershed and about 200 inhabitants live thereon. The flow is from 500 to 1,000 gallons per day. The well is 15 feet deep, through rich ground subsoil, some clay, underlying strata mostly slate. The well is dug and the vein of water comes from what was formerly an old coal bank. The water is supplied by gravity from the spring to the well. The water tastes and smells of iron and sulphur. An iron pump is used and the pipe connecting the spring and well is of galvanized iron. On top and on the other side of the hill from the source of the water supply, about 200 feet distant, is a cemetery. There is a very small brook between the spring and the cemetery.

ST. JOSEPH COUNTY.

New Carlisle.—Twenty-six years ago a system of driven wells were built for this town by G. Morgan, of Chicago. These wells are 118 feet deep, driven through gravel and with a capacity of 33,000 gallons per day. This water is pumped to a reservoir holding 33,000 gallons, and which is 16 feet deep and 20 feet in diameter. The supply is hard. Two miles of wooden mains, with galvanized iron service pipes, are used. One hundred families, or 99 per cent., use this water, and the 33,000 gallons are used in a day's time.

Mishawaka.—This town owns a public supply which takes its water from the St. Joseph River. This river receives sewage from above the intake of the supply and during the summer months there are many picnics held there. The water is forced into the mains at 40 pounds pressure. The mains are iron and iron and lead service pipes. This supply is not used for drinking purposes at all, that water coming from private wells.

North Liberty.—Two town wells and private wells supply this town.

River Park.—No public supply. Driven wells furnish the water.

South Bend.—In 1873 the city of South Bend had a system of artesian wells built for its public water supply. There are 63 of these wells with an average depth of 95 feet, and during 1905 these pumped 1,485,555,108 gallons. The wells go through sand and gravel. A standpipe holding 30,000 gallons, and direct pressure is used. Seventy-two and one-half miles of mains are used and these are of cast iron with lead to curb and galvanized iron from curb. Six thousand families use this supply, or 50 or 60 per cent. of the people, and 4,064,529 gallons daily are consumed. Many private wells are in use.

Village.—Driven wells owned by the different families and from 90 to 110 feet in depth furnish this supply.

Walkerton.—In 1897 this town had three driven wells built for its public supply. These wells are driven 40 feet and water comes to the surface and would flow. They are driven into gravel. This water is pumped to a standpipe with a capacity of 1,000 barrels, this being 80 feet on a derrick and is 20 feet deep and 16 feet

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF SOUTH BEND PUBLIC SUPPLY.

	-					Ammonia.	ala.	Nitrog	 E	Œ	Solids.				
Laboratory Number.	Date of Analysis.	. Odor.	Color	Odor. Color Turbidity. Sediment.	Sediment.	Free.		Nitrates.	Nitrites.	Total.	Fixed.	Hardness.	Iron B. Colli	11100 10	Remarks
19 Jan. 1	779 Jan. 15, 1906 None. None. V. s. earthy . ,0004 ,0014 ,0600 ,0007 1,000 35.7 29.5 11.2 .00 Good.	None	0:0	None	V. s. earthy	7000.	7014	009	1.0	88	7 29.5	11.2	8.	I i	Good.

CHEMICAL ANALYSIS OF WATER PROM SYSTEM OF ANGOLA PUBLIC SUPPLY.

Parts in 100,000.

.08 B. colii. Good. Good.	B. coli.		Нагалова.	S & Fixed.	S. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5.	. с Съютіле.	g Mitrites.		Z Sitrates.	O005 0009	. 0074	Meh. red 0002 Witrates. Witrate	Turbidity.	. 22	Color 6.0 8.0 M M	Date of Analysis. Odor. Color
				80 6	£7.8	9:19	8 8	8 8	8 5	8 8	4700.	Mch. red	_	Mkd	0.6 Mkd Mch. red0074 .0034 .0000 .0000 1.6 47.8 38.2	None
Rema	B. coli.	Iron.		Fixed.	Total.	Ср. Ср. Ср.				.biogimgdIA	.еетЯ	Sedime		Turbidity.	Color Turbidity.	Odor. Color Turbidity.
				z i	Solid		9	itrog 8.8	Z	non	Am					

in diameter. The water is hard. There are three miles of distributing mains used, these being of cast iron. Three hundred families use the water, or 50 per cent. of the population, and 60,000 gallons are used daily.

STARKE COUNTY.

Hamlet.—No public supply. Private driven wells.

Knox.--No public supply.

North Judson.—Private driven wells furnish the water for this town.

STEUBEN COUNTY

Angola.—A private company, called the Angola Electric Light, Power & Water Co., which was built in 1892 by the Kinney, Croston & Pilliod Co., gets their supply from bored wells with an average depth of 100 feet. These wells are bored through sandy loam surface, clay and deep gravel. When the mains are not flushed often the water develops a musty smell and taste. Holly pumps are used. Seven and one-half miles of distributing mains are used, these being composed of iron with galvanized iron and lead service pipes. Four hundred and fifty families, or 20 per cent., use 300,000 gallons every 24 hours. Many private wells, driven from 35 to 100 feet deep, are used. When thoroughly flushed the water appears pure, but the mains are not flushed often enough and the water is often orange color and full of sediment.

Ashley.-No public supply.

Tremont.—No public supply. There is a driven town well about 90 feet deep which goes through gravel, subsoil clay, hardpan; underlying strata from which water is taken is gravel.

Hudson. -- No public water supply.

SULLIVAN COUNTY.

Carlisle.—No public supply.

Farmersburg.—Private wells and cisterns furnish the supply for this town.

Shelburn.—No public supply.

Sullivan.—Sullivan now owns a public system, the supply of which is taken from a small creek. This was built by Howe & Co. eight years ago. This creek receives much water from several coal mines above the dam and is far from being a satisfactory supply. It is pumped to a standpipe 80x20 feet and from there flows through eight miles of mains having galvanized iron service pipes. About 450,000 gallons per day are used, but only for sprinkling and such purposes, the water for drinking and domestic purposes coming from private wells. The town is now figuring on sinking wells. The water is very hard and smells and tastes of sulphur.

SWITZERLAND COUNTY.

Vevay.—This town owns and operates a water supply which was built in 1895 by Guild & White, of Chattanooga, Tenn., and which gets its water from the Ohio River. This water is pumped to a reservoir 16 feet deep and holding 1,500,000 gallons. In summer it develops a somewhat stagnant odor and taste. The water is soft, and four miles of distributing mains are used, these being of cast iron dipped, with galvanized iron service pipes. Sixty-two per cent, or about 200 families, use this water for fire, sprinkling, and other purposes, but it is not used at all for drinking, as this water comes from private wells.

TIPPECANOE COUNTY.

Clarks Hill.—No public supply.

Lafayette.—In 1875-76 the city of Lafayette built a public water supply consisting of driven wells 35 feet deep, and 5,000,000 gallons can be pumped in 24 hours. The supply is pumped to a reservoir 28 feet deep and with a capacity of 4,200,000 gallons. The water is hard and 50 miles of cast iron distributing mains are in use, extra strong \(\frac{1}{2} \)-inch lead being used for service pipes. The average daily consumption of water is 2,500,000 gallons, and 5,000 families, or 25 per cent. of the population, use this supply. Many private wells are also used.

West Lafayette.—A private company called the West Lafayette Water Works Co., and built in 1893, furnishes this town with its supply, which is taken from driven wells 70 feet deep. A reser-

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF CLARKS HILL PUBLIC SUPPLY.

						Ашш	onia.	Ammonia. Nitrogen	g	δ.	Solids.				
Laboratory Mumber.	Date of Analysis.	Odor.	Color	Color Turbidity. Sediment.	Sediment.	Free.	.bioninindlA	Nitrates.	Mitrites Chlorine.	Total.	Fixed.	Hardness.	Iron.	B. Coli.	Remarks
669	699 October 23, 1906	None	0.0	V. 8.	None 0.0 V.s V.s	0000	0000	.0000 .0020 .0000 .0000 1.2 42.9 87.1 81.7 Tree Good.	000	42.9	87.1	31.7	Tr'ce	:	Good.

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF LIBERTY PUBLIC SUPPLY.

Parts in 100,000.

						Amm	Ammonia. N	Nitrogen as	g 2		Solids.					
Laboratory Mumber.	Date of Analysis.	Odor.	Color	Color Turbidity.	Sediment.	F166.	.biomimudlA	Nitrates.	Nitrites.	Chlorine.	Total.	Fixed.	Hardness.	Iron	B. Coli.	Remarks
88	65 Oct. 11, 1906	Decided	0.0	None	0.0 None None None 0022 0164 3000 00032 1.30	.0022	.0164	9006	7000	8	: :			8	:	Bad.
4	77 Oct. 23, 1906	Decided musty		.3 Slight	Slight 0038 .0144 .2000 .0010 1.00 36.0 21.5 Tr'ce	.008	.0144	2000	0100	8	- 2	1.5		lr'ce	:	Good.
28	334 May 12, 1906	S. earthy		V. 8	5 V. s S. éarthy0000 .3200 .2300 .0008 19.6 159.8 98.7 14 Tr'ce Dou'tful	9000	3200	2300	900	9.6	- 8.62	 2	=	lr'ce	:	Dou'tful

voir is used which is 50 feet high and about 35 feet in diameter, the water being supplied from this by gravity. Cast iron mains are used and galvanized service pipes. About 500 families use the supply. Private wells are used also.

TIPTON COUNTY.

Tipton.—The city of Tipton built a system of driven wells in 1892, these wells being from 300 to 600 feet deep, the water coming from limestone. This water is pumped into two 20,000 barrel cisterns. The supply flows through 10 miles of cast iron mains, lead and galvanized iron being used for service pipes. About 700 families, or 75 per cent. of the population, use this water. The water is good.

Windfall.—No public supply.

UNION COUNTY.

Liberty.—In 1894 the town of Liberty built a supply, the source of the supply being five springs. These springs are walled in with cement at the surface and piped into a reservoir through a 4-inch galvanized iron pipe. Natural pressure is used. The reservoir is 80x75 feet and 14 feet deep in center. In the latter part of the summer a mossy taste and odor develops. The water is hard. Five miles of mains are used of galvanized iron, iron and lead pipe being used for service pipes. There are about 250 families using this water.

VANDERBURGH COUNTY.

Evansville.—In 1900 Evansville completed new water works with Holly pumps. The supply is taken from the Ohio River, and is pumped direct from intake into the mains. This supply is soft water. Eighty miles of distributing mains of cast iron, with wrought iron galvanized for service pipes, are used. Four thousand families, or 50 per cent., use the supply, 9,000,000 gallons daily being used.

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF EVANSVILLE PUBLIC SUPPLY.

			_	Ammonia. Nitrogen	nia.	Nitro at	gen .		Solids.					
Odor.	Color Turbidity.		Sediment.	.eer ¹ 4	.bionimpdlA	.setantiN	Nitrites.	Chlorine.	.latoT	Fixed.	натаправ.	Iron.	B. Coli.	Remarks
arthy	Earthy 0.0 V. marked V. marked V. marked 3064 .0350 .1000 .0010 .3 28.5 28.5 28.0 3.0 Tr'ee +	pe4.	V. marked	780	0220	1000	.0010	ಯ	28.5	25.0	3.0	Ir'ce	+	
опе	263 April 5, 1906 None 5- Slight Much reddish .0014 .0020 .0060 .0003 2.8 59.2 50.0 15.4 .06		Much reddish	.0014	0000	900	.0003	80.	2.69	20.0	15.4	8	Ť	

tNot same as 262.

CHEMICAL ANALYSIS OF WATER FROM PUBLIC WELL AT LIVONIA.

Parts in 100,000.

						Amm	Ammonia. Nitrogen	litroge as		00	Solids.				
Laboratory Mumber.	Date of Analysis.	Odor.	Color	Color Turbidity. Sediment.	Sediment.	F166.	.bionimudlA	Nitrates.	Nitrites. Chlorine.	.latoT	Fixed.	.sseabzaH	Iron.	B. Coli.	Remarks
	428 July 24, 1906 None None 0.0 V. s B. reddish 3004 3000 8.00 8.00 8.00 24.3 23.9 .04 ° Bad.	None	0.0	V. 8	S. reddish	9000	0200	96	00 8.0	0 35.0	0 24.3	83.9	g	*	Bad.

. Gas former present.

VERMILLION COUNTY.

Cayuga.—No public supply.

Dana.—A system of driven and dug wells for use in case of fire and for sprinkling purposes, together with private driven wells is the supply for this town.

Newport.--No public supply.

VIGO COUNTY.

Terre Haute.—A private company called the Terre Haute Water Works Co., and owned by them since 1873, gets its supply from the Wabash River. All sewers discharge below the intake. The water is pumped through filters direct. In the winter the water developed an especially bad woody taste, which is due to plant life in the water. Sixty miles of mains are used, these being of cast iron with a little wrought iron, and lead and galvanized iron service pipes. Probably 40 per cent. of the population use the public supply and 60 per cent. are supplied by private wells.

WABASH COUNTY.

North Manchester.—This town owns a system of flowing wells which was built in 1894. These wells are driven 100 feet deep and are 14 in number, flowing about 55,000 gallons in seven hours. These are driven through clay top soil, gravel and sand below, and the water is pumped to a standpipe 16 feet by 110 feet high, holding approximately 162,000 gallons. The supply is hard. About five miles of distributing mains of iron, with galvanized iron service pipes, are used. Two hundred families, or 25 per cent., use daily 70,000 gallons.

Roann.—No public water supply.

Wabash.—Wabash is supplied with its water by the Wabash Water Co., a private company built in 1886 by Samuel Bullock & Co. The water comes from bored wells 60 feet deep, bored through a layer of very hard blue clay, then into gravel. This is pumped to a standpipe 100 feet high and 25 feet in diameter and covered. The water is medium hard. Twenty-six miles of mains of cast iron, with service pipes of the same, are in use. Fifteen hundred, or 75 per cent. of the families, use about 750,000 gallons per day. There are some private wells on the south, but not on the north side of the city.

WARREN COUNTY.

West Lebanon.—No public water supply.

WARRICK COUNTY.

Boonville.—This city owns an artificial lake 6 to 13 feet in depth, which was built in 1896. The watershed consists of 200 acres with three houses thereon. A standpipe is used and the water is pumped to it. This standpipe is 100 feet high and is 20x30 feet. The water from this supply is soft. Iron on steel is used for the nine miles of distributing mains, and 350 families use the water. There are also many private wells in use.

WASHINGTON COUNTY.

Campbellsburg.—No public supply.

Hardinsburg.—No public water supply.

Livonia.—Private bored wells furnish the supply for this town. New Pekin.—No public supply.

Salem.—This town has a system of springs which they had built in 1884, and which is owned by Salem. The watershed is 1,000 acres, wooded and cleared and with about 75 inhabitants thereon. The flow from these springs averages 125,000 gallons. The water is hard and the soil is clay, limestone subsoil. A reservoir with a capacity of 60,000 gallons is used. At times the water develops a taste of mud and rotten leaves. After hard rains the water becomes muddy, but this will be remedied soon by improvements. About five miles of mains of iron are used, with gas pipe for service pipes. Four hundred families, or 66 2-3 per cent. of the population, use the supply, and the average daily consumption is 80,000 gallons. A few private wells are used.

WAYNE COUNTY.

Boston.—No public supply.

Cambridge City.—The only public supply Cambridge City has is for sprinkling and fire protection. The taste and appearance of well water used is good, but the nearness of many of the wells to privy vaults is not assuring that in the future the water may not be contaminated.

Centerville.—No public water supply.

CHEMICAL ANALYSIS OF PUBLIC WELL AT CAMBRIDGE CITY.

Ammonia. Nitrogen Solids.	Pree. Pree. Mitrites. 330 November 22, 1905 None None None Tr'ce Tr'ce 2000 0003 1.2 88.7 30.4 14.0 0.00 Good.	
a. Nitro		3e 3000
Ammonia		Tr'ce Tr'
	Sediment.	None
		None
	Color	0.0
	Odor.	None
	Date of Analysis.	November 22, 1905
	Laboratory Number.	Z

CHEMICAL ANALYSIS OF WATER FROM PUBLIC WELL AT HAGERSTOWN.

Parts in 100,000.

	Remarks	Bad.
	B. Coli.	8
	Iron.	
	натапьта.	22.5
5	Fixed.	168.0
Solids.	.latoT	182.5
	Chlorine.	59.4
ogen	Mitrites.	2000
Ammonia. Nitrogen	Nitrates.	2000
onia.	.blonimudlA	0900
Amm	.0011	0100
	Sediment.	None0010 .0060 .2000 .0002 59.4 182.5 163.0 22.5
	Color Turbidity. Sediment.	None
	Color	0.0
	Odor.	None
	Date of Analysis.	245 March 30, 1906 None None
	Laboratory Number.	35

Dublin.—Private wells furnish the supply for this town.

Hagerstown.--Private wells from 18 to 105 feet deep furnish the water supply for Hagerstown.

Milton.—No public supply.

Richmond.—The Richmond Water Works Co., a private concern, built in 1884 by S. L. Wiley Construction Co., gets its supply from a well 25 feet deep, drawing 500,000 gallons, with a capacity of 1,000,000 gallons per day, and from a system of gallery wells. This water is piped to a reservoir having a capacity of 8,000,000 gallons. The watershed area is about eight square miles with 12 families living thereon. The water at times has a fishy smell and tastes of old wood. The water is hard. Thirty-eight miles of mains are used, these being of cast iron with lead service pipes. Two thousand families or about 66 2-3 per cent. of the population, use the supply, which consists of about 2,000,000 gallons per day.

Whitewater.—There are two public wells in this town, about 20 feet deep into clay.

WELLS COUNTY.

Bluffton.—In 1884 Bluffton had built a system of driven wells about 500 feet deep. The water is pumped by compressed air into a well 30x60 feet and 30 feet deep, cemented and cleaned annually with the fire hose. The water is hard, and 4.5 miles of distributing mains are used of cast iron having lead pipe ¾-inch in diameter and weighing 2½ pounds. Four hundred and eighty taps, with some others in flats, supply 60 per cent. of the population with 350,000 gallons per day.

Liberty Center.—Private drilled wells from 60 to 160 feet deep supply this town.

Ossian.—No public supply.

Poneto.-No public supply.

WHITE COUNTY.

Brookston.—No public supply.

Monticello.—In 1895 the town of Monticello built a dug well 20 feet deep, having 14 feet of water. The soil is gravel. This well has a brick wall. The water is pumped to a standpipe with a capacity of 126,000 gallons. The water is medium hard. A

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF RICHMOND PUBLIC SUPPLY.

						Amm	mmonis.	Nitrogen	100	-	Splide	╢-			-	
								8.8		!					_	
treboratory	Date of Analysis.	Odor.	Color	Turbidity.	Sediment.	Kree.	.bionimudlA	Nitrates.	Nitrites.	Chlorine.	Total.	Fixed.	Hardness.	Iron.	B. Coli.	Remarks
458	August 8, 1906	None	0.0	None	V. slight	00100	8600.	.3500	.0003	.40	38.7 2	28.4	25.4	0000		
466	August 8, 1906	81. foul	0.0	None	V. sl. earthy	0000	9000	2000	5000	4	30.0	32.5	25.0	.0000	+	:
469	August 11, 1906	Sl. earthy	0.0	None	V. slight	9000	8200.	.1200			\$2.1	23.5	19.7	0000	<u>.</u>	
488	August 16, 1906	None	0.0	None	V. slight	.0010	.0046	.1500	1000	- <u>8</u> -	37.2	29.1	30.2	Tr'ce	•	
490	August 16, 1906	None	2.0	None	Sl. veg	0000	8700.	1500	0000	8	39.1	7.62	1.63	Tr'ce		
497	August 22, 1906	Dec. musty	0.0	None	None	.0020	.0158	.1200	9100.	8	38.5	25.0	20.2	Tr'ce	<u>.</u>	
49 8	August 22, 1906	None	0.0	None	None	0000	9700.	.1000	0000	3.	47.1	32.8	30.7	Tr'ce	•	
499	August 22, 1906	Dec. musty	0.0	Slight	V. slight	.0014	9200.	.1000	.0015	- 2 3	37.2	 0:82	20.1	0100	- <u>÷</u>	:
536	August 28, 1906	None	0.0	None	None	1900	960	.0050	000.	8	42.6	34.6	28.6	0200	÷	
537	August 28, 1906	None	0.0	None	None	9800.	.0142	9090	.0016	.275	34.3	2.92	22.5	Tr'00	-	
838	August 28, 1906	None	0.0	None	None	.0014	.0046	1500	0000	8	37.3	28.6	27.2	Tr'ce	<u>:</u>	:
539	August 28, 1906	None	0.0	None	Мопе	.0048	.0132	.0000		क्ष	30.4	87.8	18.1	000	:	:
240	August 28, 1906	None	0.0	None	None	.0014	0400	1000	9000	8. 8.	35.6	27.2	24.1	0900		:
541	August 28, 1906	None	0.0	None	None	0100	1200.	.0070	::	275	32.7	25.0	23.6	0000	<u>+</u>	:
613	September 27, 1906	None	0.0	None	None	0000	9900	1000	 8000	8	35.0	27.3	83.3	0200	<u>:</u>	
614	September 27, 1906	None	0.0	None	V. slight	0000	.004	.1000		8	35.0	27.0	0.8	01150	÷	
							-	-	-	-	-	-		-	-	

+ Acid gas formers present. * Gas formers present.

little more than five miles of distributing mains are used, these being of iron. Three hundred families, or 40 per cent., use this supply, and 200,000 gallons per day are consumed. The well is 60 feet below the level of the town, being in the river bottom. The well is 12 feet in diameter and until the last year flowed from outlet five or six feet below surface when not pumped.

Monon.—No public supply. Wolcott.—No public supply.

WHITLEY COUNTY.

Churubusco.—In 1898 this town had a well bored 385 feet deep, over 100 feet being in rock, by the Seckner Water & Light Co. The water is pumped to a standpipe 100 feet high, 10 feet in diameter and holding 2,000 barrels. At times the water develops an unpleasant taste of dead water, but this is usually when the pipes have not been flushed. Two miles of mains of cast iron distribute the water to the 200 families using it. About 100 per cent. use the supply and 30,000 gallons per day in summer are consumed. A new well is being put in by Miss Josia Kingdom, but the water has not as yet been turned into the mains.

Columbia City.—This city built a system of drilled wells in 1894, these wells being from 200 to 800 feet deep, drilled in rock. The water is pumped to a standpipe by direct pressure. The water is soft and at times tastes of iron. Twelve miles of distributing mains of iron, with lead service pipes, are used in carrying the 400,000 gallons which are used daily by 75 per cent. of the people. About 15 private wells are in use.

South Whitley.—This town built four bored wells in 1896, with an average depth of 50 feet. The water is pumped by direct pressure. The water is hard and at the end of the pipe line has a dead taste, or stagnant. Iron is used for the 2 3-5 miles of mains and lead is used for the service pipes. About 40 families, or 25 per cent., use this supply, and 90,000 gallons per day are consumed.

CHEMICAL ANALYSIS OF WATER FROM MONTICELLO PUBLIC SUPPLY.

						Amm	Ammonia. Nitrogen	Nitro	gen		Solids.	.				
Laboratory Mumber.	Date of Analysis.	Odor.	Color	Color Turbidity.	Sediment.	Free.	.bionimudiA	Nitrates.	Nitrites.	Chlorine.	.fatoT	Fixed.	Hardness.	Iron.	B. Coli.	Remarks
100	102 Nov. 3, 1965 None 20.	None		Marked	Marked Consid. floc0100 .0003 .30 34.5 29.2			00100	8000	ક્ર	34.5	29.2	<u>:</u>			Good.
123	123 Nov. 22, 1905 None 10-	None	Ä	Marked	Marked V. 80230 .0050 .0000 .0005	.0230	.0050	0000	9000	9.	33.5	33.5 28.0 16.2 .03	16.2		:	Good.
200	Aug. 25, 1906 None 5.0	None	5.0	Marked	Marked Consid ,0250 ,0042 ,0000 ,0220 1.00 87.5 29.2	0320	.0042	0000	0220	8.	37.5		80.9	ૠ	+	.36 + Doubt-ful.

CHEMICAL ANALYSIS OF WATER FROM PUBLIC SUPPLY OF COLUMBIA CITY.

Parts in 100,000.

1	Romarks	òd.
	Ren	G
	B. coli.	:_
	I Too II.	8 .
	.в.епрлаН	8.02
Solids.	Fixed.	\$2.5
Sol	.fatoT	40.5
	Chlorine.	1.00
gen.	Nitrites.	0000
Ammonia. Nitrogen.	Nitrates.	0000
onia.	.bionimudlA	.0034
Amm	Eres.	120.
	Sediment.	V. s
	Color Turbidity.	None 0.0 Slight
	Color	0.0
	Odor.	None
	Date of Analysis.	Aug. 25, 1906
	Lebotetory Mumber.	218

THE INSPECTION AND CONTROL OF FOOD AND DRUGS.

In the absence of national legislation on the subject it has remained for the several States to solve the problem of pure food as best they might. Inability of the individual State to interfere with interstate commerce has been one of the chief drawbacks to the framing of an entirely satisfactory pure food law. A State can, provided the means are afforded it, regulate the manufacture and sale of all home products. But when all other States are allowing the manufacture of impure goods it becomes an impossibility for any one State to keep such goods from coming over its borders. Notwithstanding this vital defect in the working of any local pure food law, every State has some form of a food law on its statute books.

Pure food laws are a part of the police power of the State, and as such are subject to the broadest interpretation. The extent to which a State may go to protect public health and prevent fraud is indefinable and unlimited. The laws are justified by the unquestioned fundamental right of the State to provide for the protection and preservation of health. Even before the enactment of special food laws, it was an indictable offense to mix anything in the food made and supplied for human consumption which would be unwholesome and deleterious to health, and the wilful adulteration or mixing unwholesome ingredients in foods was considered an act dangerous to the public health and to life, and constituted a public nuisance.

The State food laws were first intended to prohibit the sale of foods injurious to health. The statutes were strictly drawn for this purpose and the courts have in all instances upheld them. This class of adulteration has been so rigidly restricted that its extent is much less than formerly, except in the case of the use of antiseptics and coloring materials. The contention is made that the use of the extremely small quantities of antiseptics necessary to prevent fermentation and decay in no way imperils the life or health of the consumer. But the courts frequently have held that "It is not the quantity but the nature of the substance which the act prohibits."

By far the greater part of the adulteration of food is not an

attack upon the health of the consumer, but an economic fraud, and consists in forcing upon him without his knowledge products different from what they purport to be, lacking in valuable constituents or made from cheap ingredients so prepared as to counterfeit the genuine article. It is to the suppression of adulterations of this class that most recent legislation has been directed.

The food law under the provisions of which the laboratory is operated dates back only as far as 1899. Earlier than this there had been some food legislation, chiefly of a specific character, but lack of enforcement rendered it of little value. In 1883 the oleomargarine bill was enacted, making it obligatory upon dealers in oleo to label their product. The General Assembly in 1905 re-enacted all food laws passed by earlier legislatures, making such changes therein as were suggested by a committee appointed to revise the code. The present food law of the State was given in full in the annual report of the State Board of Health for 1905, together with the food standards and definitions adopted July 7, 1905, by the State Board of Health. These rulings furnish a definite basis for work in the enforcement of the pure food law. The definitions and standards adopted are those established as official for the United States Government or given in the latest edition of the Pharmacopoeia. The analytical methods employed are the official methods approved and adopted by the Association of Official Agricultural Chemists.

In the absence of any definite information as to the character of the foods and drugs sold in the State, before a proper enforcement of the law could be undertaken, it was necessary to learn of conditions that needed a remedy. In order to get this information, and to be fully advised as to the conditions of the markets throughout the State, the first step taken towards law enforcement was to send out inspectors to every section, for the purpose of taking samples of foods and drugs for analysis, and to spread among manufacturers, wholesalers and retailers of those products, information as to the character of the law, its provisions and intentions. Proper observance of food and drug laws, which are technical in character and the meaning of which is not easily interpreted, can only follow a clear understanding of the law. The inspectors have given much attention to this phase of the work, which is educational rather than corrective, and their results con-

firm the idea that law violation is more often the result of ignorance and unskilful preparation, than of wilful misrepresentation During the year, L. W. Bristol, Bert W. Cohn, Chas. Bragg, Wm. McAbee and R. E. Bishop have acted as food and drug inspectors, and have visited nearly all the larger cities and towns of the State at least twice, and in some cases three times. The cities so inspected were Indianapolis, Anderson, Muncie, Ft. Wayne, South Bend, Elkhart, Goshen, Hammond, Michigan City, Whiting, Peru, Marion, Alexandria, Elwood, Noblesville, Lafayette, Crawfordsville, Brazil, Greencastle, Terre Haute, Vincennes, Evansville, New Albany, Madison, Jeffersonville, Washington, Franklin, Edinburg, Martinsville, Bloomington, Richmond, Connersville, Columbus, Covington, Attica, Williamsport, Veedersburg, Hillsboro, Kokomo, Huntington, Huntingburg, Boonville, Salem, Mt. Vernon, Delphi, Logansport, Auburn, Tipton, Plymouth, Rushville, Oakland City, Princeton, Wabash, Laporte, Albion, Valparaiso and Rochester. In addition to the collection of samples for analysis the inspectors made note of the character of the stores and markets visited, and have reported all unclean, filthy or unsanitary places, visited slaughter-houses, and examined into local health conditions.

The results of these investigations are described under the title, "Condition of Groceries, Markets and Slaughter-Houses."

In addition to the regular inspectors who have been engaged entirely in work outside the laboratory, the chemical force has also made frequent inspection trips for the purpose of purchasing samples and investigating unsatisfactory conditions. The cost of inspectors' traveling and hotel expenses and the purchase of samples has been \$1.584.20. The number of samples brought in and analyzed was 5,200; the cost per sample was, therefore, 30.46 cents, a figure which is very low in view of the fact that at least a part of each inspector's time was occupied in other than food and drug work.

Much work has also been done at the laboratory for the purpose of informing wholesalers and manufacturers as to the character of the products they were handling. These samples have been sent to the Laboratory accompanied by proper information as to their source. The results of the analyses which have been furnished the dealers have been heartily appreciated by them, and

have contributed largely in assisting them to remove their stock of adulterated goods and as well have assured them that the quality of new invoices was satisfactory. Manufacturers and wholesalers all over the State have taken advantage of the opportunity the Laboratory has afforded for this work, and have not failed to express their appreciation of the assistance they have received. The Laboratory was opened for work about the 1st of September, 1905, and in this report is enumerated all the work done since that time up to the end of the fiscal year, covering a period of about 14 months. During that time there have been analyzed 3,641 samples of food products, and 1,559 samples of drugs. Of the total number of food products examined 57.7 per cent. have been pure, while of the drug samples 37.5 per cent. have been pure.

The expense of maintaining the Food and Drug Laboratory from September 1, 1905, the time when work was commenced, to October 31, 1906, including salaries of chemists, clerk and janitor, laundry bills, sundry drug bills, apparatus to replace breakage during the year, postage, etc., was \$4,588.43. The total number of food and drug samples analyzed was 5,200, thus making the cost per sample 88.24 cents. The total cost per sample for collection and analysis was \$1.187. Included in this estimate are many expenses that were not actually incurred in the food and drug work. For instance, much of the office work consists in answering queries and sending out information concerning the food and drug laws, and much of the time of the chemist is occupied in executive rather than in analytical and inspection work.

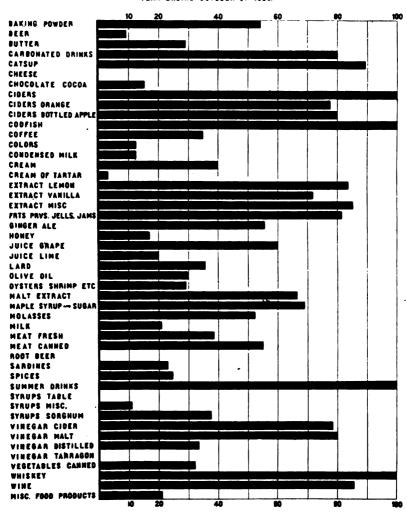
The following summary gives in detail the character and variety of the work done and the analytical results:

RESULTS OF ANALYSES OF FOOD SAMPLES.

Articles Examined.	Good.	Bad.	Total.	Per Cen of Adul teration
Baking powder	22	26	48	54.1
Beer	70	7	77	9.1
Rutter	27	1i	38	28.9
Carbonated drinks	- 4	16	20	80.0
Catsup	8	67	75	89.3
Cheese	5	ö	5	0.0
Chocolate and cocoa	44	Ř	52	15.3
Ciders	ō	8 6	6	100.0
Ciders, orange	ž	Ť	ğ	77.7
Ciders, orange. Ciders, bottled apple.	i 1	À	5	80.0
Codfish	ô	4	4	100.0
Coffee	15	. š	23	34.8
Colors	7	ĭ	8	12.5
Condensed milk	7	1	8	12.8
Cream	29	19	48	39.5
Gream of tartar:	248	18	256	3.3
Extract lemon	56	287	343	83.7
Extract vanilla	53	136	189	71.9
Extract miscellaneous	5	29	34	85.3
Panis in sin	13	20	13	0.0
Fruit in tin	22	97	119	81.5
Finger ales	4	Š	119	55.5
Honey	20	6	35	17.1
Juice, grape	2	3	5	60.0
Juice, lime	4	î	5	20.0
	27	15	42	20.0 25.6
	132	56	188	29.8
Olive oil	22	20	31	29.0 29.0
Dystors, shrimps, etc	-i l	2	3	66.0
Maple syrup and sugar	36	79	115	68.7
	10	ii	21	52.3
Molasses	368	. 93	461	20.1
		. #3 88	229	20.1 38.4
Meat, fresh	141	88 11	229	35.4 55.0
Mest, canned	71	10	20	
Root beer	12		- 1	0.0 23.0
Sardines	10	1.8	18	
pices	446	147	593	24.7
Summer drinks, miscellaneous	0	4	4	100.0
grups, table	.3	0	.3	0.0
grups, miscellaneous	16	2	18	11.1
grups, sorghum	10	. 6	16	87.5
Vinegar, cider	52	187	239	78 2
Vinegar, malt.	4	16	20	80.0
negar, distilled	4	2	6	83.8
inegar, tarragon	.1	.0	.1	0.0
Vegetables, canned	40	19	59	32.2
Whisky	0	.2	2	100.0
Wine	3	18	21	85.1
Miscellaneous food products	63	17	80	21.2
Total	2,098	1,543	3,641	42.3

PERCENTAGE OF ADULTERATION OF FOOD PRODUCTS IN INDIANA

YEAR ENDING OCTOBER 31 1906



It has been the custom of the Laboratory to publish from time to time in the Monthly Bulletin of the State Board of Health summaries of the work, giving names of dealers and manufacturers of products both good and adulterated. The press of the State has also given wide publicity to the results of the Laboratory in frequent popular articles, and as well by occasionally reporting in full the results, has contributed largely to a better understanding of what the Food and Drug Law is, and of the conditions of the markets which make its enforcement necessary. The Bulletin has also been distributed widely among manufacturers, wholesalers, retailers and the public, and has served to convey much information as to the character of the food and drugs sold. The health officers of many cities and towns have acted as food and drug inspectors and have devoted much attention to the quality of the goods sold in their cities. The cities of Indianapolis, South Bend, Ft. Wayne, Crawfordsville, Terre Haute, Evansville, Noblesville, Newcastle and Columbus have done valuable work, particularly in controlling the quality of their milk supply. It is, of course, very desirable that every city have its own milk inspector and a properly equipped laboratory where the necessary analytical work may be done. In the absence of such facilities, however, the State Laboratory endeavors to assist local authorities, and has furnished material help in many instances.

MILK.

During the fall of 1905 our inspectors visited most of the larger cities and towns and collected samples of milk which were shipped to the Laboratory for analysis. The quality of the milk supplies thus investigated was found to be good. In only a few instances did it appear that preservatives or coloring matter had been used. The results of the examination show that of the 461 samples analyzed 368 were pure and 93 were adulterated. These figures do not express the true character of the milk, however, so far as wilful violation of the law is concerned, for most of the milks reported as adulterated were so classed because they contained a slightly lower fat content than that required by law, and not because they bore evidence of having been skimmed or watered. The control of the purity of a milk supply by Laboratory methods is satisfactory in so far as it insures the sale of milk of

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MILK ANALYSES BY CITIES AND TOWNS.

Locality.	No. Above Stand- ard.	No. Below Stand- ard.	Total No. Samples Col- lected.	Per Cent. Below Stand- ard.	Per Cent. Total Solids in Lowest Sample.	Per Cent. Fat in Lowest Sample.
Alexandria	6	0	6	0	_	
Anderson		ľ	ğ	11.1		8.0
Bourbon	1	1 0 1	1	0	_	_
Brazil	8 1 5 1 0 1 2 6 1 8 5 9		9 1 6 1 1 2 11 2 12	166	' -	3.1
Broad Ripple	1	0 1 0	1	0		_
Bridgeport	0	1	1	100.0	_	2.4
Cartersburg	1	0	1	0	_	l –
Carmel	2	0	2	0	-	
Columbus	6	0 5 1	11	45.4		3.0
Crawfordsville	1	1	2	50.0	11.23	1.9
Bikhart	8	4		33.3	9.79	1.7
Elwood	.5	1	_6	16.6		2.0
Evansville		5	24	20.8	6.75	1.55
Powler	0	5 1 0	1	100.0	10.40	2.00
Franklin	2	0	2	0_		l - -
Pt. Wayne	8	6	14	42.5	10.21	2.4
Greencastle	3	O O	8	0	_	_
Greenfield	Z	Ņ	2	Q	_	_
Hagerstown	Ĭ	Ņ	3 2 1 12	.0		٠
Hammond	2	1 0	12	50.0	_	3.0
Huntington	0 2 8 3 2 1 6 7	#	8 19	12.5	10 70	3.1 1.35
Indianapolis	13	%	19	37.0 31.5	6.79	1.30
	17	2		10.5	11 70	2.6
Kokomo. Lafayette	13	1 7	19	7.1	10.83	1.3
Lebanon	5	1 1	16	16.3	10.63	1.5
Marion	19	4	15	13.3	11.78	3.2 2.8
Michigan City	13 15	1 6	15	10.5	11.70	2.0
Martinsville	15	1 1	15	20.0	_	
Mt. Vernon	4	۱ ۸	4	20.0	_	_
Muncie	11	8	14	21.3	11.21	2.3
Noblesville.		6 0 0 0 0 6 1 7 6 2 1 1 2 0 1 0 3 2 2 1 3 2 3 2 3 2 3 2 3 2 1 3 2 1 3 2 1 3 2 1 3 2 1 3 2 1 3 2 1 3 2 1 3 2 1 3 2 1 3 2 1 3 2 1 3 1 3	18	25.0	11.66	2.4
Napoleon	6 1	l ñ	ĭ	0.0	100	
New Albany	16	1 3	19	21.0	10.28	1.6
New Castle		2		28.5	10.51	liĭ
Oakland City	ă	1 7		20.0		3.02
Petersburg	7	l ī	Ř	12.5		2.0
Rockville	5 4 7 1 1 77 45	1 0	7 5 8 1	i 0	_	=
Russiaville	Ĩ	lŏ	1 1	Ŏ		l –
South Bend	7 7	15	92	16.3	10.08	1.5
Terre Haute	45	11	56 8 5	19.6	9.46	1.4
Vincennes	2	1	8	33.3	12.27	8.0
Washington	4	ī	5	20.0	`	3.0
Forty-two towns	368	93	461	20.1		

standard composition, free from added water, color and preservatives. But it does not guard against unsanitary conditions of production and handling that are of far more importance to the public health than the frauds practiced by unscrupulous dealers. The healthfulness of the cows, well kept dairies, and suitable appliances for cooling and marketing milk before it becomes the host of myriads of abnormal bacteria, are factors which can not be neglected if a city's milk supply is to be kept clean and wholesome. It is obvious that State inspection of dairies can not well be undertaken. The State can not keep a host of inspectors to cover 36,000 square miles nor control the conditions of thousands of dairies. Such work should be the duty of sanitary officers ap-

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pointed for the purpose by each city. Several cities of the State have already undertaken such inspection and report that at the beginning of the work but few dairies were found that were properly arranged and handled. Indianapolis is requiring of its milk dealers the observance of scrupulous cleanliness about the barn and milkhouse, and milk inspectors make frequent inspections to see that the regulations are lived up to by the producers. New Albany has recently adopted a comprehensive milk inspection ordinance that may well be adopted by other cities. It differs from the usual ordinance in that no license fee is charged the dairyman for his permit to sell his produce. Instead he pays a veterinarian for inspecting his herd at least four times a year. This the dairyman is usually willing to do, for such inspection is now a part of the routine of successful dairying.

CREAM.

Of the 48 samples of cream examined, 19, or 39.5 per cent., were classed as adulterated. The standard fat content of cream is 18 per cent., and it is apparent from the results obtained that many dealers put out cream containing much less than that. One sample examined contained only 4 per cent. of fat and was in truth nothing more than a rich milk. We have found no evidence of cream thickeners, gelatine compounds, etc., having been used.

BUTTER.

Of the samples of butter analyzed 27 have been good and 11 adulterated. The condition of the butter market is worthy of serious attention. A single inspection of the city market of Indianapolis showed that of nine samples of so called "dairy butter" purchased, six were eleomargarine. Several of the samples so sold were wrapped in brown paper which when taken from the butter was found to bear the stamp "eleomargarine." It is evident that the dealers using such a stamp were doing it only for the purpose of complying with the regulations of the Internal Revenue Department, rather than to give any information as to the article purchased. The stamp was nearly illegible and so placed as to be entirely hidden from the purchaser. The addition of the word "eleomargarine" in such a fashion does not, however, comply

with the Government regulations. The regulations for the sale of oleomargarine by retail dealers as laid down by the Internal Revenue Department are as follows:

"Each retailer's wooden or paper package must have the name and address of the dealer printed or branded thereon, likewise the words 'pound' and 'oleomargarine' in letters not less than onequarter of an inch square, and the quantity written, printed or branded thereon in figures of the same size (one-quarter of an inch square), substantially as follows:

1	 .	
2	 	

 $[\frac{1}{2}]$ pound

1. Here give dealer's name.

Oleomargarine.

2. Here give street number.

(Letters 1/4-in. sq.)

3. Here give name of city or town."

"The words 'oleomargarine' and 'pound,' which are required to be printed or branded on retailer's wooden or paper package, in letters not less than one-quarter of an inch square, and the quantity which is required to be written, printed, or branded thereon in figures of like size, must be so placed as to be plainly visible to the purchaser at the time of delivery to him. Illegible or concealed marks and brands are not those contemplated and required by the law and regulations. It will not be deemed a compliance with this regulation if the word 'oleomargarine' and the other required words and figures shall be illegibly branded or printed or so placed as to be concealed from view, by being on the inside of the package, or by folding in the stamped portion of the paper sheet used for wrapping or otherwise. The required words and figures must be legibly printed or branded and conspicuously placed, and no other word or business card should be placed in such juxtaposition thereto as to divert attention from the fact that the contents of the package are wholly oleomargarine.

"The foregoing regulations relative to the marking or branding of retail packages apply equally to sales of colored and uncolored oleomargarine.

"The color of the ink with which the words are printed must be in the strongest contrast to the color of the package."

We have never yet purchased oleomargarine as such or under

the disguised name of "dairy butter" that was properly marked. The dealers stoutly maintain their rights to sell oleomargarine under fancy names. They insist that it is called "dairy butter" by the trade; that, in fact, long continued usage authorizes the sale of oleomargarine when dairy butter is called for. The phrases "Country Roll," "Jersey Roll," etc., are also applied to oleomargarine. Of course, such misleading terms are used only to deceive the customer and promote the sale of oleomargarine. There is no contention nowadays that oleomargarine is not as wholesome as butter; the illegality of its sale consists in the fact that the retailer purchasing it for 15 cents a pound or less, is able by selling it as butter to make an enormous profit.

Within recent years a very large business has been built up in the manufacture and sale of so-called renovated butter. vated butter is made from butters that are unsalable because of their appearance, odor, rancidity and general unfitness for consumption. Renovated butter stock is collected throughout the country much as soap grease is collected. It is hauled to some central depot and there melted, strained, treated with acids or alkali or blown with steam until it is deodorized and its rancidity is removed. The butter is then rechurned, usually with milk, and worked up into salable form. The better grades of renovated butter are of fine appearance and of good quality, and large amounts of renovated butter are manufactured yearly, and yet after frequent inquiry of dealers in butter we fail to find that the renovated article is ever sold. It undoubtedly comes to market as creamery butter, and the extent of the imposition practiced by butter dealers or house to house vendors must be very great.

BUTTER-LEGAL.

Laboratory Number.	Brand.	Retailer.	Where Collected.	Butyro- Reading
812			Indianapolis	
942	Creamery	Star Grocery	Indianapolis Princeton Elwood	42.0 44.2
898 918		Zoeller-Mertz Amos R. Walton	Ft. Wayne	44.2 44.0 43.9
128 615	Dairy	Joe Vinali Kissell	Plymouth Market House, Indianapolis	44.0 44.0
620 682	Dairy	Barrick Brinkerman	Market House, Indianapolis Market House, Indianapolis Indianapolis.	43.8 44.2 42.8

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BUTTER-ILLEGAL.

Labora- tory Number.	Brand.	Retailer.	Where Collected.	Butyro- Reading.	Halpen Test.	
1385			Indianapolis.	l		Oleomargarine.
3668	Butter	Court House Grocery	Indianapolis.	49.9	Linkt	Oleomargarine.
3734	Creamery.	Court House	Indianapone.	10.0	might	Oloumaigaiine.
		Grocery	Indianapolis.	49.6	Light	Oleomargarine.
3813	Creamery.	Court House	Tadianasalia			01
4612	Dairy	Grocery	Indianapolis. Market House			
613	Dairy	M. J. Carlisle.	Market House	51.9		
3614	Dairy	Lewellen		50.7		Adulterated.
5618	Dairy		Market House Market House			Adulterated. Oleomargarine.
617	Dairy.		Market House			
	Country .		Princeton	50.0		
151	Country		Brazil	48.0		
1848			Terre Haute	41.9		

CHEESE.

Of the 19 cheeses analyzed all have been pure. The use of preservatives is not uncommon in soft cheese, such as the so-called "Neufchatel" or cream mixtures, but on the whole we find but little evidence of adulteration in this dairy product.

CONDENSED MILK.

Condensed milk is made by evaporating milk to one-half or one-third its original volume and adding cane sugar. In reporting the results of the analysis of the samples examined, we have given the amount of fat present in the sample and also the amount of fat present in the original milk. The results show that every sample but one examined, was made from normal whole milk; no preservatives were present. Several samples of so-called evaporated cream were analyzed, but proved to be simply whole milk evaporated to a creamlike consistency. Aside from this resemblance they were in nowise condensed cream. Under the new food law this misleading term or name will be abandoned and the product will be sold for what it is, simply evaporated milk.

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UNSWEETENED CONDENSED MILK-PURE.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Per Cent. Fat.	Fat in Orig- inal Milk.	Solids.	Asb.	Number Times Condensed.	Remarks
277	"Greenville"	Greenville Milk Condensing Co.,							
1753	"Pet''	Greenville, III Helvetia Milk	Terre Haute.	7.80	4.17	29.94	1.31	1.87	
3678	"Columbia".	Condensing Co., Highland, Ill Borden's Con-	Indianapolis	9.00	4.66	32.07	1.35	1.93	!
	"Highland"	densed Milk, N. Y. City	Irvington	7.99	3.22	31.97	1.70	2.42	
ļ		Condensing Co, Highland, Ill	Indianapolis	9.00	4.89	30.00	1.29	1.84	
4152	"Top Notch"	Van Camp Pack- ing Co., Effing- ham, Ill	Berne	7.50	3.62	28.35	1.45	2.07	

SWEETENED CONDENSED MILK-PURE.

4455 "Star" Michigan Condensed Milk Co., New York 8.40 3.65 78.40 1.60 2.30

SWEETENED CONDENSED MILK-ILLEGAL.

4453 "Lea	der''	Michigan Con- densed Milk Co., New York	 6.60	2.71	76.10	1.70	2.43	Made from milk deficient in fat.
			 	<u>'</u>				

ICE CREAM.

The product sold as ice cream is of varying composition, the basis of which is a cream or milk mixture flavored and frozen. Genuine ice cream should be made wholly of cream, properly flavored. Such a mixture will not remain in a solid condition long, and the practice of adding some solidifier such as gelatin or gum tragacanth has become common among dealers. Starch may also be employed as a thickener. The U. S. Department of Agriculture standard for ice cream requires that at least 14 per cent. of butter fat be present. Under this standard none of the six samples of ice cream analyzed were pure. Three contained large quantities of gelatin.

ICE CREAM.

Laboratory Number.	Manufacturer.	Where Collected.	Fat, Per Cent.	Gelatin.	Starch.	Remarks.
4422 4423 4424 4425 4126 4427	Wm. Downey	South Bend South Bend South Bend South Bend South Bend South Bend	8.5 12.0 11.5 11.5 10.0 7.0	None None Trace Much Much	None	Low in fat. Not pure cream. Not pure cream.

BAKING POWDER.

Baking powder is a leavening agent now in general use which has taken the place of the cream of tartar and saleratus mixture formerly employed in raising bread. It acts in the same manner as the older preparation and leavens the bread by the formation within the loaf of carbon dioxid. Baking powder is composed of acid and alkaline constituents so prepared that when brought into contact with water a chemical reaction takes place between the acid and alkaline carbonate with the resulting liberation of carbon dioxid.

The value of a baking powder depends, therefore, on the amount of gas liberated in the process of bread making. A good powder is one so compounded that the acid salt, which may be bitartrate of potassium, calcium acid phosphate, or alum, is present in just the quantity required to set free all of the carbon dioxid in the bicarbonate of soda, the alkali usually used. Normal baking powders will give 10 per cent. and over of their weight as gas. All powders producing less gas are deficient either because of deterioration by age or improper compounding.

In reporting the results we have given the percentage of carbon dioxid capable of being liberated in the process of baking, and have also designated the character of the powder. Several of the samples were not of the composition claimed for them and a large number, 26, or 54.1 per cent., were low in carbon dioxid. Probably many of the powders classed as illegal were up to the standard when packed, but had deteriorated with age. This can not be taken into consideration, however, either by the housewife or the chemist, and it becomes the duty of the manufacturer to recall his stock before it is so old as to be worthless. One sample

contained less than 2 per cent. of available carbon dioxid, and a cook using this powder would have to employ at least 20 teaspoonfuls to the quart of flour.

BAKING POWDER-LEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Available Carbon Di- oxid %.	Remarks.
1719	Cream of Tartar	Columbia Grocery Co., Indianapolis	Indianapolis.	12.86	Cream of tartar pow- der. Pure.
3314	Home-Made	Wabash Baking Powder Co., Wabash	Columbus	13.89	Phosphate powder.
3362	Good Luck	The Southern Mfg. Co., Richmond, Va.	Columbus	14.70	Alum powder. Pure.
3393	Ladies' Friend.	Canby, Ach & Canby, Dayton, O.	Columbus	14.23	Phosphate powder. Pure.
3404	Fehring's	Wabash Baking Powder Co., Wabash	Columbus	13.11	Alum Phosphate
3457	Midway	J. F. Lowe & Co., Columbus	Columbus	10.97	Alum phosphate powder. Pure.
84 58	Common Sense.	Dayton	Columbus	12.66	Alum powder. Pure.
3590	Monarch	Reid, Murdock & Co., Chicago	Indianapolis.	11.70	Cream of tartar pow- der. Pure.
3483	Faultless	Heekin Spice Co., Cincinnati	Columbus	10.24	Phosphate powder.
4193	Rinne's	C. H. Rinne	Indianapolis.		Phosphate powder. Pure.
4208 70	Royal	Canby, Ach & Canby, Dayton	Lafayette Elwood	13.25 13.8	Cream of tartar pow-
1208	Reliable	Grocers' Supply Co., Indianapolis.	Princeton	10.19	der. Pure. Alum phosphate powder. Pure.
1413	Club House	Franklin MacVeagh Co., Chicago		10.62	Cream of tartar pow- der. Pure.
1613	American	Louisville	New Albany.	10.72	Alum phosphate
4663 4666	Egg	Egg Baking Powder Co., New York Hulman & Co.,	Indianapolis.	11.60	powder. Pure. Phosphate powder.
4677	Miami	H. C. Porter & Co	Terre Haute. Peru	10.30 11.00	Alum phosphate.
5213 5236	Imperial	Mayer Bros. Co., Ft. Wayne Wabash Baking Powder		i	
5347	LaBaw's	Co., Wabash	1	14.41	
5818 5974	Empire Enterprise	Co., Wabash	Veedersburg. Richmond	14.8	
		Wabash Baking Powder Co., Wabash	Greencastle	1	

BAKING POWDER-ILLEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Available Carbon Di- oxid %.	Remarks.
176	Clabber*	Hulman Coffee Co., Terre Usute	Brazil	7.02	Alum phosphate
1678	Queen Flake	Northrop, Robertson & Currier, Lausing, Mich.	Salem	9.87	Phosphate powder. Below standard.
1681	Bon Bon	J. C. Grant Chemical Co., St. Louis	Salem	8.91	Alum powder. Low
1749	Egg*	Egg Baking Powder Co., New York	Indianapolis.	8.52	grade. Phosphate powder.
3315	Kenton*	Kenton Baking Powder Co., Cincinnati	Columbus	7.11	Low grade. Alum phorphate
8352	Bon Bon	J.C. Grant Chemical Co., E. St. Louis	Colúmbus	8.42	powder. Low grade. Alum powder. Low
3353	M. O'C.*	M. O'Connor & Co., Indianapolis	Columbus	4.00	grade. Alum phosphate powder. Very low
3354	Calumet*	Calumet Baking Powder Co., Chicago	Columbus	2.04	grade. Alum phosphate
3355	Јегвеу	Dayton Spice Mills Co Dayton, O.	Columbus	8.05	powder. Very low grade. Alum powder. Low grade.
3364	Lion	Wabash Baking Powder Co., Wabash	Columbus	11.89	No phosphate pres-
3875	Bakers' De- light*	Grocers' Supply Co., Indianapolis	Columbus	6.42	ent. Pure but wrongly labeled. Phosphate powder.
3376	Reliable	Eddy & Eddy, St. Louis.	Columbus	7.60	Low grade. Phosphate powder. Low grade.
3383	Olympia	Canby, Ach & Canby Co., Dayton, O	Columbus	5.06	Phosphate powder. Very low grade.
3415	Purity	Sheridan & Co., Pittsburgh	Columbus	6.33	Phosphate powder.
3417	Blk	Rethwisch & May, Columbus	Columbus	5.70	Very low grade.
3456	Clabber*	Hulman Coffee Co., Terre Haute	Columbus	6.29	Phosphate powder. Low grade.
3458	Yukon	Reid, Henderson & Co., Chicago	Columbus	7.70	Alum phosphate powder. Lowgrade.
3480	Purity	Sheridan & Co., Pittsburgh	Columbus	4.72	Phosphate powder. Very low grade.
3459	Cameo	Cameo Baking Powder Co., Chicago	Columbus	1 94	Alum phosphate powder. Very low
3569 3591	Empress N. Y. Store's	Pettis Dry Goods Co., Indianapolis	Indianapolis.	9.25	grade. Phosphate powder. Low grade.
3608	Phosphate Whipped	Pettis Dry Goods Co., Indianapolis	Indianapolis.	4.44	Alum phosphate powder. Very low
3653	Cream Pure Cream	Geo. J. Hammel, Indianapolis	Indianapolis.	8.76	grade. Alum phosphate powder. Low grade.
	Tartar	M. J. Stewart, Indianapolis	Indi ana polis.	5.32	Alum phosphate powder. Very low
3716	Imperial	Criterion Mfg. Co., Indianapolis	Indianapolis.	6.84	grade. Alum powder. Low grade.
6251	Imperial	Meyer Bros	Ft. Wayne	9.80	Below standard.

^{*}Samples were old stock and had undoubtedly deteriorated with age as analyses of fresh goods showed them to be well above the legal standard.

CREAM OF TARTAR.

Potassium bitartrate, ordinarily known as cream of tartar, is the agent once much used together with sodium bicarbonate or cooking soda, for leavening bread, biscuit, etc. The development of the modern baking powder has largely diminished the use of cream of tartar and now but small quantities are sold. During the year we have examined 256 samples of cream of tartar, collected for the most part from drug stores, of which 248, or 96.9 per cent., of the samples were pure. This condition is somewhat surprising in view of the fact that cream of tartar was formerly one of the most heavily adulterated food products. All of the adulterated samples were bought at grocery stores and consisted of mixtures of alum, gypsum and starch. One of the samples was so carefully compounded that its acidity was exactly that of normal cream of tartar. Other samples were poorly made, and one was so low in acidity that it had no value as a liberator of carbon dioxid.

COFFEE.

Of the 23 coffee samples analyzed, 15 have been pure and eight were classed as adulterated because of the use of facings or the admixture of chicory and roasted cereals. The adulteration of coffee is now rarely practiced, since the introduction of the cheap Brazilian and Central American products which sell as low as seven cents a pound does away with the necessity of artificial Coffee is faced or coated by some manufaccoffee substitutes. turers for the purpose, as they claim, of retaining the aroma of the coffee. Such treatment, however, is more frequently employed to make a low grade coffee look like a better article. facing or polishing of coffee with sugars, water, albumen or any other preparation, is illegal. But one sample, and that a package coffee, contained chicory. The chief fraud of the coffee trade consists in the sale of inferior grades for the more desirable higher priced berry. The amount of Mocha coffee imported from Arabia each year is but a tithe of the coffee sold as Mocha. The same is true of Java coffees. It is probably true that almost all of the so-called Mocha and Java coffees on the market are nothing but the better grades of Central American coffees.

COFFEE-LEGAL.

Number.	Brand.	Manufacturer or Retailer.	Where Collected	Remarks.
3065	High Grade	G. E. Barsley & Co., Ft. Wayne, Ind	Ft. Wayne	
3066 3071	Koner Blend Keystone	F. Widlar & Co., Cleveland, O. A. B. Walter & Co., Ft. Wayne, Ind.	Ft. Wayne	Pure. Pure.
3118		Thompson & Taylor Co.		Pure.
3161 3167 3224		Chicago Durand & Kasper, Chicago Henry Finske McNeil & Higgins Co., Chicago	Michigan City. Michigan City. Michigan City.	Pure.
3259 3275 3306	Conrad's	J. H. Conrad & Co., Chicago Hulman & Co., Terre Haute Court House Grocery (West)	Indianapolis Indianapolis	Pure.
3307 3308	Kona Blend Best African Java	Court House Grocery (West) Court House Grocery (West)		Pure.
3386	Arbuckle's Ariosa	Arbuckle Bros, New York	Columbus	
3746 3616	12½c	Pettis Dry Goods Co		labeled legally. Pure.
0010	tute for coffee	John A. Smith Co., Milwaukee, Wis.	Indiana polis	Cereal drink.
3748	12½c	Wasson's	Indianapolis	Pure.

COFFEE-ILLEGAL.

1762 17½c. Tilfer Coffee Co., Detroit Ft. W National Grocery Co. Sout India 3349 XXXX W.F. McLaughlin & Co., Chicago Columbia Java Court House Grocery India 3736 Court House Grocery India 1736	a Bend Adulterated. anapolis Adulterated. anbus Adulterated. anbus Adulterated. anapolis Adulterated.
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CHOCOLATE AND COCOAS.

Cocoa and chocolate are preparations made from the cocoa bean. The ground kernel of the cocoa bean is known as chocolate. When a portion of the cocoa butter or fat of the bean is removed by pressure, the resulting product is called cocoa. Chocolate and cocoa are adulterated by the admixture of starches, such as arrow-root, wheat and corn starch, or by the use of cocoa shells. Of the 28 samples of cocoa analyzed 22 were pure and six were adulterated. Of the chocolates 21 were pure and two were adulterated. Several samples of sweet chocolate prepared in cake form as a confection contained added starch. One cocoa sample contained a large excess of cocoa shells.

CHOCOLATE-LEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Total Ash.	Insol. Ash.	Remarks.
414	Ros. Vanilla Luncheon	Cleveland Choc. and Occoa Co., Cleveland Sprague, Warner &	Vincennes			Pure.
448	Monsoon	Sprague, Warner & Co., Chicago.				Pure.
1331	Rose	Co., Chicago	Evansville		0.78	Pure.
1698 1718	Swiss Instantaneous	S. F. Whitman & Son,	Kokomo	1.90	0.65	Pure.
1721	Genuine Swiss Milk	Philadelphia, Pa. F. L. Cailler		ļ		Pure. Pure.
1725	Breakfast Milk	Peters, Vevay, Switzerland	Indianapolis. Indianapolis.			Pure.
1739 1744 3061	Chocol'te Menier Lowney's Sweet Cleveland Pre mium No. 1	Menier, New York Lowney	Indianapolis. Indianapolis.			Pure. Pure.
3109 3121	Menier Knickerbocker	Cocoa Co., Cleveland Menier, Chicago Manhattan Cocoa and Choc Co., N. Y.	Ft. Wayne South Bend Sonth Bend	4.08	2.42	Pure. Pure.
3122	Red Ribbon	Kunkei Bros	South Bend	•••••		Pure.
3123	Wilbur's No. 1	New York H. O Wilbur & Son, Philadelphia, Pa.	South Bend			Pure.
3226	Vienna		Lafayette			Pure.
3425	Puritan Pure Foods:	New York Puritan Pure Foods Choc., N Y. & Chi.	Columbus	3.37	2.22	Pure.
3671 3697	Blue Ribbon	Knickerbocker Choc. Co., New York Hershey Choc. Co.,	Irvington			Pure.
3698 3699	Vanilla Sweet	Hershey Choc Co	Irvington Irvington			Pure. Pure.
3700	Premium No.1 Premium	W. Baker & Co, Winchester, Va. Rockwood & Co., N.Y.	Irvington Irvington			Pure. Pure.
		CHOCOLATE	-ILLEGAL.	•		
447	Batavia	Batavia Preserving Co., Batavia, N. Y.	Washington	1.50	.75	Contains foreign
3155	Swiss Process	Croft & Allen Co., Philadelphia	Michigan City	1.18	.64	starch. Adul- terated. 10 per cent. for-
						eign starch. Adulterated.
		COCOA-	-LEGAL.			
374	Justice	Wm. H. Baker, Syracuse, N. Y.	Vincennes	3.37	2.22	Pure.
3 75	Rose's	Cleveland Choc. and Cocoa Co., Cleveland	Vincennes	5.09	2.88	Pure.
376	Hershey's	Hershey's Choc. Co , Lancaster, Pa.	Vincennes			Pure.
1337	Red Ribbon	Runkel Bros., New York	Evansville	5.48	2.50	Pure.
1570	Powell's Break- fast	Alex. M. Powell. New York	Jefferson ville	5,58	3.18	Pure.
1655	Pure	Brooks Chocolate Co., Chicago		0.00	3.16	Pure.
1697	Golden Rod	Rockwood Co., New York	Kokomo	4.29	2.65	Pure.
1723	Blooker's Cocoa.	F. C. Blooker, Amsterdam	Indianapolis.	 	 	Pure.

COCOA-LEGAL-Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Total Ash.	Insol Ash.	Remarks.
1724	Blooker's Dutch Cocos	F. C. Blooker, Amsterdam	Indianapolis.			Pure.
1745 1752	Purity	Huyler, New York Rockwood & Co	Indianapolis.			Pure.
1755	Pure Soluble	New York C.J. Van Houten &	Indianapolis.	4.55	2.84	Pure.
3011	Bedford	Zoon, Holland J. H. Barker & Co., Brooklyn, N. Y.	Indianapolis. Kokomo	5. 23	2.61	Pure.
3119	Wilbur's Break-	H. O. W. Wilbur &				•
3120	American Break- fast	Son., Phila' phia, Pa. Manhattan Choc. and	South Bend	4.44	2.32	Pure.
3416	Croft's.	Cocos Co., New York Croft & Allen,				Pure.
3426	Puritan Pure	Philadelphia, Pa. Purit in Pure Foods	Columbus	4.58	2.97	Pure.
3693	Bedford	Co., New York Knickerbocker Choc.	Columbus	4.87	2.83	Pure.
3640	London	Co., New York H. O. Wilbur & Sons, Philadelphia	Irvington Indianapolis.	4.30 3.15	2.67 1.70	Pure. Contains arrow-
4029 4030	Leader	Atkinson & Co., New York Atkinson & Co., New York	Indianapolis Indianapolis			root starch, but is properly la- beled. Pure.
4850	Rose's	Cleveland C. C. Co	Indianapolis.	•••••	•••••	Pure.
		COCOA-1	LLEGAL.			
476	Prepared Break- fast, Eureka	Kenwood Preserve Co., Chicago	Washington	6.33	3.80	Contains excess of shells. Adul- terated.
1589	₩ebb's	Jos. Webb & Co., Milton, Mass.	Jeffersonville	7.09	3.85	Excess of shells.
1715	Justice	Wm. H. Baker, Syracuse, N. Y.	Kokomo	4.32	2.25	Adulterated. Contains foreign starch Adul- terated.
376 3	Purina	Halston Purina Co, St. Louis	Indianapolis.	1.71	.94	25 per cent. for- eign starch. Adulterated.
3780	Homeopathic	J.S. Frye & Son, London, Eng.	Indianapolis.	1.96	1.17	50 per cent. arrow- root starch. Adulterated.
5319	Webb's	Jos. Webb & Co., Milton, Mass.	Covington	7.47	5.08	Excess of shells.

TEAS.

But few teas were examined and these were all pure, if we except the addition of coloring matter usually known as facing. The Board of Tea Experts of the Treasury Department which has fixed the standard of purity, quality and fitness for consump-

tion of tea imported into the United States, allows the importation of teas which have a minimum amount of coloring substances not deemed unwholesome or deleterious to the consumer. In line with this decision we have not classified faced teas as adulterated.

LEMON EXTRACTS.

In the analysis of lemon essences or extracts we have required that at least five per cent. of pure lemon oil should be present. Many terpeneless lemon extracts are sold as pure extracts, but as they contain no lemon oil, or are made from oils from which the terpenes have been removed, they must be considered to be adulterated. The sale of compound lemon extract is not allowable. The value of an extract for flavoring purposes depends upon the amount of pure lemon oil present, and the compounding of oil of lemon grass, citral and dilute alcohol makes a fraudulent product.

The action of certain manufacturers of flavoring extracts in attempting to override the standard which we have adopted for lemon extract by claiming that their products made from citral, or with a "washed out oil," are pure lemon extract, and therefore not adulterated, calls for special attention on the part of wholesalers and retailers to the fact that our standard for lemon extract reads as follows:

"Lemon extract shall contain at least five per cent. of the pure oil of lemon dissolved in alcohol."

Under this ruling, which is in accordance with the standard set by the United States government and by all the States that have adopted a standard, the extracts made from the "terpeneless" lemon oil and from "washed out oil" must be considered to be adulterated. While oil of lemon owes much of its characteristic aroma to citral, it is none the less true that lemon extract, as we know it, does not depend for its flavor on the citral alone, but that its character is influenced to a considerable degree by the terpenes present in normal oil of lemon. Limonene, the chief terpene of lemon oil, is an essential constituent, and when blended with the citral gives the true flavor of lemon.

To claim that extract made from citral and "washed out oil" is made from lemon oil is as fallacious as the statements of the vinegar manufacturer that his compound of acetic acid, water and color is cider vinegar because the acetic acid is present. Terpeneless extracts can legally be sold if they are so labeled, but when lemon extract is ordered, only the standard article should be supplied.

The results of our analyses show that but few pure goods are sold, and that most of the so-called lemon extracts are inferior substitutes, of little value to the housewife. We found but 56 pure extracts out of 343 examined, while 287, or 83.7 per cent., were either low in lemon oil, contained no lemon oil at all, or were artificially colored with yellow dyes.

LEMON EXTRACT-LEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Specific Gravity.	Alcohol by Volume.	Lemon Oil.	Color.
4611	Dean's	Wabash Baking Powder	•	'			•
4681		Co., Wabash	Roachdale	.9060	63. 26	1.70	Not natural.
4864	Mayflower	A. Coburn & Co	Laporte	.8335	88.64	2.00	Natural.
		Philadelphia	Indianapolis.		46.91		Natural.
4989 4991		E. R. Durkee, New York. Jos. Burnett & Co., Boston	Indianapolis.	ł	43.71	li	Natural.
5025	Our Dream	Steele & Atwood,	Indianapolis.	.8306	91.00	9.50	Natural.
5066		G. E. Callaway,	Frankfort	.8570	82.54	5.00	Natural.
5278		Cambridge City McMonagle & Rogers,	Cambridge Cy	.8051	97.71	5.90	Natural.
5329	• • • • • • • • • • • • • • • • • • • •	Middleton, N. Y.	Muncie	.8170	91.76	6.50	Tropaelin.
		Hulman & Co., Terre Haute	Attica	.8430	87.24	5.20	Natural.
5359	Diadem	Schnull & Co., Indianapolis	Veedersburg.	.8370	89.08	7.0	Natural.
5361	Viking	E. R. Webster Co., Cincinnati	Covington	.9469	43.10	0.0	Dinitrocresol
5838		Geo. Loesch, Drug Store, Ft. Wayne	Ft. Wayne	1	85.10		Natural.
5849		Christian Bros., Drug Store	Ft. Wayne		90.30		Natural.
5881 5930		Ed Mertz, Drug Store McMonagle & Rogers,	Ft. Wayne		89.10		Natural.
	D	Ohio	Ft. Wayne	.8350	89.70	6.6	Natural.
5931	Puritan	Ohio Moellering Bros., Ft. Wayne Eddy & Eddy, St. Louis.	Ft. Wayne	.8698	77.70	5 7	Not natural.
5976 6023	Eddy's	H. N. Janner, Goshen	Greencastle Goshen		77.5 86.81		Not natural.
6050 6056	••••	F. H. Benzer, Elkhart Kenyon Medical Co.,	Elkhart	.8355	89.54	7.9	Not natural.
6067			Elkhart	.8548	83.31	7.5	Not natural.
6094		Houseworth Bro., Elkhart	Elkhart	.9396	47.36	14.9	Colorless.
		Coonley Drug Co., South Bend	South Bend		77.71		Natural.
6123 6148		H. L. Spohn, South Bend. S. T. Applegate,	South Bend	ŀ	89.96		Not natural
6152		South Bend Leo Eliel, South Bend	South Bend South Bend .		89.92 86.42		Natural. Natural.
6249	Coon	Thompson & Taylor Co., Chicago	Indianapolis.	.8668	78.80	6.0	Natural.
6292	Real	Jos. Strong Co., Terre Haute	Terre Haute		88.76		Natural.
6313		Jos. Strong Co., Terre Haute	Terre Haute	l	89.92		Natural.
6335 6348		J. M. Callender, Laporte T. H. Boyds, Laporte	Laporte	.8406	87.96	5.6	Natural. Natural. Not patural.
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Laboratory Number.	Brand.	Manufacture:	r.	Who Collec	ere cted.	Specific Gravity.	Alcohol by	Lemon Oil	Color.
6389	l	W. H. Williams, Valg							
6398				alpar		.8644	9 -		Natural.
6423		Valp Oak Drug Store, Ply Chickens Drug St	araiso V	-	aiso	9443		100	Not natural.
6185		Ply Chickasaw Drug St	mouth P	lymou	at h	.8819	75.1	15.4	Natural.
6506		Porter the Druggie		eru	••••	8269	92.0	8.6	Natural.
6514		Thisband & Co., Pa	Peru P	eru	· • • • • • • • • • • • • • • • • • • •	.8318 .8305		5.6 12.2	Natural. Not natural.
6537		Ed M. Moran, Michiga	n City M	lichig	an City	9420	46.0	5.7	Natural.
6552		Otto Kloepfer, Michiga	n City M	lichig	an City	.8581	82.1	6.0	Natural.
656 5		A BICIUS DLAS CO"	. 1	hitin	g	.8281	91.7	5.7	Natural.
197		Joseph Burnett Co.		erre H	aute	.8249	92.6	10.0	Natural.
303	Chapman's	Chapman & Smith, Chica	go, Ill. M	lartin	sville .	8665	78.93	5.16	Natural.
385		John N. Bey & Co., Vine	! 17	incen	nes	8559	82.93	6.20	Natural.
433	Silver Seal	Walsh, Boyle & Co	., III. W		gton	8236	93.0	5.30	7.00
1092	• • • • • • • • • • • • • • • • • • • •	ocuseier & ocuseie	himaga U	untin	gton	8235	93.09	6.25	Natural.
1429 1298	Club House	Franklin McVeagh Franklin McVeagh D. C. Peters, Lapor Kaplinsky & Moran	Co H	untin	gton	8498 8281	85.00 91.73	5.50	Natural. Natural. Natural.
2036 2098		D. C. Peters, Lapor	te L	anort4	an City	8345	89 84	15.02	Natural. Natural.
2206 2419		Heineman & Sieve J B. Wehrle E. P. Whinery Hutching & Murph	rs V	BIDST	B180	3238	93.0	118.70	Natural.
2505 2727		E.P. Whinery	<u>M</u>	uncie	on	8241	92.9	8.10	Natural. Natural.
2958 2474		E. H. Wilson H. H. Ice	11	ndian	o apolis.	.8309 .8294 .8238	91.3	7.90	Natural. Natural. Natural.
Laboratory Number.	Brand.	Manufactur	er.		Town	•	Lemon Oil.	Alcohol by Volume.	Remarks.
3973 3986 3989	0wl	F. W. Green Conner's Drug Sto E. R. Webster & Co	re	El	wood.	any.	6.89 7.87	92.71	Pure. Pure.
4024		Boener-Fry Co.,	Cincinna City, Iow	l l	bion		5.34 6.87	94.97 91.00	Pure.
		LEMON EX	KTRACTS	3-ILI	LEGAI		<u>'</u>		
7.					<u> </u>	ه ۾	011.	1	
Laboratory Number.	Brand.	Manufacturer.	Where Collected.			Alcohol by Volume.	Lemon 0		Color.
16	Premium	Grocers' Supply Co., Indianapo-							
19	Waldorf	lis Edwin, New York	Columbi Columbi		.8745 .9734	7d.01 22.73	2.25 0.0		opæolin. phthol yellow.
21	Improved Brand	J.C. Grant Chem. Co.,Chicago,Ill.	Columbi	18	.9821	14,27	 		

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Laboratery Number.	Brand.	Manufacturer.	Where Collected.	Specific Gravity.	Alcohol by Volume.	Lemon Oil.	Color.
29		Reid, Henderson					
62	Gold Arrow	Chicago, Ill. Newton Tea and Spice Co.,	Franklin	.9713	24.78	0.0	Naphthol yellow.
80	Roids Superior	Roads Extract	Elwood	.9439	44.86	0.0	Natural.
84	Standard	Co., Chicago, Ill. Atwood & Steele	Alexandria	87.93	74.22	2.12	Natural.
127	Seely's	Co., Chicago, Ill. Seely Mig. Co.,	Alexandria	.9769	19.39	0.0	Naphthol yellow.
128	Sachs-Prudens	Detroit, Mich.	Muncie	.8560	82.90	4.25	_
		Sachs-Prudens, Dayton, O.	Muncie	.9657	29.95	0.0	Tropsolin.
133	Link's	Link & Nelson, Paris, Ill.	Brazil	.8412	87.79	6.56	Turmeric.
134	Shaffer's	Wabash Baking Powder Co., Wabash, Ind.					
157	Eddy's Double Strength		Brazil	.9078	62.41	.96	Natural.
161	Napoleon	Eddy & Eddy, St. Louis, Mo. Forbes Chem. Co.,	Brazil	.8611	80.96	5.20	Dinitrocresol.
164	Keystone	Bement, Rea &	Brazil	.9911	6.48	1.34	Naphthol yellow.
178	Chapman's	Co., Terre Haute, Ind. Chapman & Smith,	Brazil	.9690	26.95	0.0	Naphthol yellow.
180	Rex	Chicago, Ill. Frank Tea & Spice Co	Brazil	.8631	80.19	5.40	Naphthol yellow.
185	Viking	Spice Co., Cincinnati, O. E. R. Webster & Co.,	Brazil	.9408	46.14	0.0	Naphthol yellow.
190	Jos. Strong &	Cincinnati, O.	Terre Haute	.9415	46.32	0.0	Natural.
	Co. Real	Terre Haute Cof-					
191	Pure and Sure.	fee & Spice Mills, T. Haute Frank Tea &	Terre Haute	.8508	84.67	7. 6 0	Dinitrocresol.
193	Van Duzer's Fruit	Spice Co Cincinnati, O. Van Duzer & Co.,	Terre Haute	.9324	51.12	0.0	Turmeric.
195	Bastine's	New York Bastine & Co., New York	Terre Haute	.8259	92.39	5.00	Turmeric.
198	Standard	New York Gillettes Chem. Works.	Terre Haute	.8530	83.94	3.10	Natural.
245	Baker's Pride.	Chicago, Ill. Terre Haute Ex- tract & Cheese Co., T. Haute	Terre Haute	.9559	37.41	0.0	Naphthol yellow.
271	Norton'sSt'nd-		Terre Haute	.9685	27.40	0.0	Naphthol yellow.
272	ard Crown	Co., Terre Haute C. W. Bauermeis- ter, Terre Haute	Terre Haute	.9797	16.52	1.10	Natural.
		ter, Terre Haute	Terre Haute	.9366	48.97	0.0	Tropæolin.
278	Ideal	ter, Terre Haute	Terre Haute	.9648	30,73	0.0	Dinitrocresol.
286	Our Pride	Gast & Strosler, Louisville, Ky.	Martinsville.	.9840	12.49	0.0	Natural.
287	Tropical Fruit.	C. A. Schrader, Indianapolis	Martinsville.	.9819	14.46	.759	Naphthol yellow.
289	Diadem	Schnull & Co., Indianapolis	Martinsville.	.8719	76.98	3.52	Natural.
290 302	Eddy's Special	Eddy & Eddy, St. Louis, Mo. E. R. Webster &	Martinsville.	.8589	81.84	5.06	Dinitrocresol.
302	A 1 K 1 U B	Co.,	Martinsville.	9501	95.90	0.0	Trop
	ı	i Cincinnati, U.	. Mrstffilisailie.	1 20071	1 00.40	. 0.0	TIOP

Laboratory Number.	Brand,	Manufacturer.	Where Collected.		Specific Gravity.	Alcohol by	Lemon Oil.	Color.
6389	******	W. H. Williams,	Vale	unufu.	.8644	70.7	0 = 1	Natural.
6398		Heineman & Sievers.	eman & Sievers.		E 0.3	-	0.01	A COUNTY OF THE PARTY OF THE PA
6423	********	Oak Drug Store,	-375		5.77	44.6	1000	Not natural.
6185		Plymouth Chickasaw Drug Store,	100	outh	.8819	1000	133	Natural.
6506		Porter the Druggist.	Peru	*********	.8269	92.0	78.6	Natural.
6514 6537		Peru Thieband & Co., Peru Ed M. Moran.	Peru Peru			90.6 91.0	4 5.6 0 12.2	Natural. Not natural.
	***************	Michigan City	Mich	igan City	.9420	46.0	05.7	Natural.
6552		Otto Kloepfer, Michigan City	Mich	igan City	.8581	82.1	6.0	Natural.
6565	*********	Whiting Drug Co., Whiting	Whit	ing	.8281	91.7	15.7	Natural.
197		Joseph Burnett Co., Boston			8249	92.6	10.0	Natural.
303	Chapman's,	Chapman & Smith, Chicago, Ill.	record and the transfer of		1000		5.16	5,000
385		John N. Bey & Co.,						
433	Silver Seal	Walsh, Boyle & Co.,	100000000000000000000000000000000000000				3 6.20	
1092		Schaefer & Schaefer,	Washington		.8236	93.0	5.30	Natural.
1429 1298 2036 2098 2206 2419 2505 2727 2958 2474	Club House Club House	Chiengo Franklin McVeagh Co. Franklin McVeagh Co. D. C. Peters, Laporte. Kaplinsky & Moran Heineman & Sievers J. B. Wehrle E. P. Whinery Hutchins & Murphy E. H. Wilson H. H. Ice	Valparaiso. Anderson Muncie Kokomo Indianapolis.		.8498 .8281 .8345 .8281 .8238 .8173 .8241 .8309	85.00 91.73 89.86 91.60 93.00 94.7 92.90 91.00 91.3	1 5.02 9 5.00 0 8.70 1 6.10 1 8.10 0 7.80 4 7.90	Natural.
Laboratory Number.	Brand.	Manufacturer.	Town.			Lemon Oil.	Alcohol by Volume.	Remarks.
3973 3986		F. W. Green Conner's Drug Store E. R. Webster & Co.,	Elwood.		any.	6.89 7.87	92.71	Pure. Pure.
3989	Owl	Cincin	nati .			5.34	94.97	Pure.
1024	****	Boener-Fry Co., Iowa City, I				6.87	91.00	Pure.

LEMON EXTRACTS-ILLEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Specific Gravity.	Alcohol by Volume.	Lemon Oil.	Color.
16	Premium	Grocers' Supply Co., Indianapo-			İ	i	
19 21	Waldorf Improved	lis	Columbus Columbus	.8745 .9734	7d.01 22.73	2.25 0.0	Tropæolin. Naphthol yellow.
21	Brand	J.C. Grant Chem. Co.,Chicago, Ill.	Columbus	.9821	14.27	ļ,	

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Laboratery Number.	Brand.	Manufacturer.	Where Collected.	Specific Gravity.	Alcohol by Volume.	Lemon Oil.	Color.
29		Reid, Henderson					
62	Gold Arrow	Chicago, Ill. Newton Tea and Spice Co.,	Franklin	.9713	24.78	0.0	Naphthol yellow.
80	Roids Superior	Cincinnati, O. Roads Extract	Elwood	.9439	44.86	0.0	Natural.
84	Standard	Co., Chicago, Ill. Atwood & Steele	Alexandria	87.93	74.22	2.12	Natural.
		Co., Chicago, Ill.	Alexandria	.9769	19.39	0.0	Naphthol yellow.
127	Seely's	Seely Mig. Co.,	Muncie	.8560	82.90	4.25	Natural.
128	Sachs-Prudens	Sachs-Prudens, Dayton, O.	Muncie	.9657	29.95	0.0	Tropsolin.
133	Link's	Paris III	Brazil	.8412	87.79	6.56	Turmeric.
134	Shaffer's	Wabash Baking Powder Co., Wabash, Ind.					
157	Eddy's Double Strength		Brazil	.9078	62.41	.95	Natural.
161	Napoleon	Eddy & Eddy, St. Louis, Mo. Forbes Chem. Co.,	Brazil	.8611	80.96	5.20	Dinitrocresol.
164	Keystone	Chicago, III. Bement. Rea &	Brazil	.9911	6.48	1.34	Naphthol yellow.
178	Chapman's	Co., Terre Haute, Ind. Chapman & Smith,	Brazil	.9690	26.9 5	0.0	Naphthol yellow.
180	Rex	Chicago, Ill. Frank Tes &	Brazil	.8631	80.19	5.40	Naphthol yellow.
185	Viking	Spice Co., Cincinnati, O. E. R. Webster & Co.,	Brazil	.9408	46.14	0.0	Naphthol yellow.
190	Jos. Strong &	Cincinnati, O.	Terre Haute	.9415	46.32	0.0	Natural.
	Co. Real	Terre Haute Cof- fee & Spice					_
191	Pure and Sure.	Terre Haute Cof- fee & Spice Mills, T. Haute Frank Tea & Spice Co	Terre Haute	.8508	84.67	7.60	Dinitrocresol.
193	Van Duzer's Fruit	Spice Co., Cincinnati, O. Van Duzer & Co.,	Terre Haute	.9324	51.12	0.0	Turmeric.
195	Bastine's	New York Bastine & Co.,	Terre Haute	.8259	92.39	5.00	Turmeric.
198	Standard	Bastine & Co., New York Gillettes Chem. Works,	Terre Haute	.8530	83.94	3.10	Natural.
245	Baker's Pride.	Chicago, Ill. Terre Haute Ex-	Terre Haute	.9559	37.41	0.0	Naphthol yellow.
271	Norton'sSt'nd-	tract & Cheese Co., T. Haute	Terre Haute	.9685	27.40	0.0	Naphthol yellow.
	ard	Bement, Rea & CoTerreHaute	Terre Haute	.9797	16.52	1.10	Natural.
272	Crown	C. W. Bauermeis- ter. Terre Haute	Terre Haute	.9366	48.97	0.0	Tropæolin.
273	Ideal	Co., Terre Haute C. W. Bauermeis- ter, Terre Haute C. W. Bauermeis- ter, Terre Haute	Terre Haute	.9648	30.73	0.0	Dinitrocresol.
286	Our Pride	Gast & Strosler, Louisville, Ky.	Martinsville.	.9840	12.49	0.0	Natural.
287	Tropical Fruit.	C. A. Schrader, Indianapolis	Martinsville.	.9819	14.46	.759	Naphthol yellow.
289	Diadem	Schnull & Co., Indianapolis	Martinsville.	.8719	76.98	3.52	Natural.
200		THEIRMANALIE		1			
290 302	Eddy's Special Viking	Eddy & Eddy, St. Louis, Mo. E. R. Webster &	Martinsville.	.8589	81.84	5.06	Dinitrocresol.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Specific Gravity.	Alcohol by Volume.	Lemon Oil.	Color.
304	Our Special	Reed & Hender-					
		son, Chicago, Ill. Roosa & Ratliff, Cincinnati, O.	Martinsville.	.9709	25.17	0.0	Naphthol yellow.
309	Delmonico	Cincinnati, O.	Martinsville.	.9371	51.48	0.0	Naphthol yellow.
311	Monogram Triple	J. C. Perry & Co., Indianapolis, Ind.	W4!:	0000	CF 70		N-A1
336	Bey's	Frank Tea & Spice Co.,	Martinsville	.9020	65 73	0.92	Natural.
349	Special	Cincinnati, O.	Vincennes	.9383	48.05	0.0	Natural.
350	Immense	Eddy & Eddy, St. Louis, Mo. Winter Spice &	Vincennes	.9197	57.10	0.0	Dinitrocresol.
		Chicago, Ill.	Vincennes	.9784	17.81	0.0	Naphthol yellow.
352	Oriental	Jas. H. Forbes, St. Louis, Mo. John N. Bey, Vincennes, Ind.	Vincennes	.9837	12.77	0.0	Natural.
358	Silver Shield	John N. Bey, Vincennes, Ind.	Vincennes	.9692	26.77	0.0	Naphthol yellow.
362	Delmar	Co.,	V:	0705	17 70	0.0	Nambahal mallam
370	Our Own	St. Louis, Mo. B. C. Bult Mass Vincennes, Ind.	Vincennes	.9785 .9318	17.70 51.43	0.0	Naphthol yellow.
381	Ben Hur	Bain & Chapman.	Vincennes	.8708	77.36	2.50	Dinitroc esol.
382	Splendid	St. Louis, Mo Jas. H. Forbes, St. Louis, Mo.	Vincennes	.9501	41.26	0.0	Naphthol yellow.
383	Risch's Perfect	Risch Bros., Vincennes, Ind	Vincennes	.9338	50.42	0.0	Natural.
395	Blanke's Ex- position	C. F. Blanke & Co.,					
413	Per ction	St. Louis, Mo. Cincinnati Ex- tract Co.,	Vincennes	.8839	72.42	3.10	Natural.
429	Dr. Pierce's	Cincinnati, O. Dr. Pierce's Flav. Ext. Co.	Vincennes	.9624	32.65	0.0	Natural.
431	Creme	Ext. Co, Indianap'is, Ind. Royal Remedy & Ext. Co.,	Washington	.93 88	47.78	0.0	Natural.
446	Superior		Washington	.9616	33 31	0.0	Dinitrocresol.
449	Gilt Edge	E. W. Gillett, Chicago, Ill. Frank Tea & Sp'e	Washington	.9184	57.74	0.0	Dinitrocresol.
467		Cincinnati. O.	Washington	.9269	53.77	0.0	Dinitrocresol.
531	Kingery	L. V. Logan, New York	Washington	.9332	50.72	0.0	Tropæolin.
548		Phil'a, Pa. Bunton Drug Co.	Brazil Terre Haute . Terre Haute .	.8484 .8755	85.46 75.64 92.36	3.60 1.50	Natural. Natural.
572 645 663	•••••••	J. S. Madison H. J. Werker W. C. Watjen R. G. Moore	Vincennes	.8260 .9219	56.11	5.00 0 0	Turmeric. Naphthol yellow.
681		R. G. Moore	Vincennes Vincennes	.8700	66.43 77.64	1.12	Natural. Turmeric.
694 747		Clark & Sons	Vincennes Princeton	.9274 .8325	53.53 90.43	5,30	Turmeric. Turmeric.
762 778		F. S. Clapp. A. F. Schmidt. J. N. Jones.	Washington Washington	.8862 .8631	71.50 80.19	1 56 4.00	Dinitrocresol. Turmeric.
801	•••••		Washington	.8245	92.80	9.90	Tropæolin and turmeric.
855 872		J. F. Bomm Meek & Albers H. J. Schlaepper.	Evansville Evansville.	.8265 .9455 .8335	92.21 43.87	3.75 0.0	Natural. Natural.
885 910		W. H. Fogus	Evansville Mt. Vernon	.8239	90.14 55.18	3.75	Turmeric. Natural.
928 940		Dawson & Boyce. D. & H. Rosen-	Mt. Vernon	.8398	88.22 65.69	5.00	Turmeric. Natural.
964 990		baumPorter the drug'st	Mt. Vernon Peru Peru	.8237 .8833	93.03	7.31	Dinitrocresol. Dinitrocresol.
1001 1010		Blue Drug Store. Chicasaw Pharm. Bradley Bros	Peru	.9205	72.65 56.77 93.67	2.30 1.77 5.47	Dinitrocresol.

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Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Specific Gravity.	Alcohol by Volume.	Lemon Oil.	Color.
1025 1055		R. E. Clark Butterbaugh & Co	Wabash	.8218 .9355	93.74 49.55 85.73	6.25 0.0	Tropæolin & tur Natural.
1077 1145	Crown	M. Kaylor Crown Chemical Works,	Huntington	.8476	85.73	5.50	Turmeric.
1146	Tri-state	Evansville Lewis Seitz Gro- cery Co.,	Oakland City	.9221	74.27	.62	Natural.
1159	• • • • • • • • • • • • • • • • • • •	Evansville Ranke & Nuss-	Oakland City Ft. Wayne	.9110	60.52 47.51	.81	Dinitrocresol. Natural.
1163	Crystal Pearl .	KvansvilleChem- ical Works,					
1175 1186 1198 1221		Evansville Dreier & Bro H. G. Sommers Meyer & Bro. & Co Pellens & Lewis.	Oakland City Ft. Wayne Ft. Wayne Ft. Wayne Ft. Wayne	.9292 .8803 .8195 .8490 .9071	52.68 73.81 94.13 85.26 62.74	.75 2.10 3.11 3.00 .75	Dinitrocresol. Turmeric. Turmeric. Natural. Dinitrocresol.
1243 1287	5-Cent Special. White Wing	Co., Cincinnati	Mt. Vernon	.9319	51.38	0.0	Dinitrocresol.
1289	Standard	cal Works, Evansville Cook Grocery Co.,	Evansville	.9338	50.42	0.0	Dinitrocresol.
1297	Priscilla	Evansville Franklin Mac- Veagh Co.,	Evansville	.9717	24.38	0.0	Dinitrocresol.
1348	Sauer's	C. F. Sauer Co., Richmond, Va.	Evansville	.9629 .8674	32.27 78.58	0.0 5.00	Turmeric. Tropsolin.
1368	Bain's Fault- less	Meyer Bain Mfg.	Evansville	.9544	38.47	0.0	Tropæolin.
1369	Napoleon	Co., St. Louis Forbes Chemical	Evansville	.9923	5.55	0.0	Natural.
1392	Gilt Edge	Co , Chicago Berdan & Co., Toledo	Huntington	.9661	27.77	.50	Naphthol yellow.
1407	Måder's	Wabash Baking Powder Co., Wabash	Huntington	.9383	48.05	0.0	Naphthol yellow.
1444	Kline's Pure	Wabash Baking Powder Co., Wabash	1				
1446	Puritan	Moellering & Mil- lard Co., Ft. Wayne	Huntington	.9399	47.18	0.0	Naphthol yellow.
1488	St. George	cery Co.,		.9556	37.62	1.50	Natural.
1490	Pure Food	Eddy & Eddy,		.8662	79.04	2.93	Natural.
1505	Star and Cres- cent Oriental	Bement & Seitz		.9437	44.98	0.0	Tropæolin.
1509	Our Choice	E, W. Gillette,	1	.9565	37.02	.31	Natural.
1526	Kehoes	Wabash Baking Powder Co., Wabash		.9743	21.89	1.06	Natural.
2592 1564 1573	Cherokee	F. C. Jones Drexler, Heft&Co	Alexandria Jeffersonville	.9223 .8758 .9331	55.93 75.49 50.77	3.16 3.75	Natural. Dinitrocresol. Tropæolin.
1580	Boss	Louisville Boss Chem. Wks. N. Y	Jeffersenville	l	19.59	0.0	Dinitrocresol.
1581	Oak Flavoring Extract	si .	Jeffersonville	.9776	16.82	0.34	Dinitrocresol.
1603	1	Louisville Columbia Extrac	t		1	0.0	Dinitrocresol.
1617	0w1	E. R. Webster J	New Albany	.9672	28.59	0.31	Natural.
		Co., Cincin-	. New Albany	.8745	76.01	2.90	Tropæolin.

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Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Specific Gravity.	Alcohol by Volume.	Lemon Oil.	Color.
1620	Big 5	Banner Ext. Co.,					
1652	Ottenheimer	Cincinnati, O.	New Albany.	.9588	35.43	0.12	Dinitrocresol.
	Fine	Ottenheimer, Louisville, Ky.	New Albany.	.9112	60.89	0.71	Natural.
16 53	Rutter's		New Albany.	.8320	90.58	5.06	Dinitrocresol.
1665	King B	Co., Chicago, Ill. Ullman, Dreifus & Co., Cincin-	New Mibally .	.0020	30.00	0.00	Dinitiociesoi.
1674	White Cap	nati. U.	Salem	.9537	38.96	1.00	Natural.
	-	Heekin Spice Co., Cincinnati, O.	Salem	.9375	48.48	00	Tropæolin.
1687	Puritan	Cincinnati, O. Glazebrook, Rutherford, Thomas				ŀ	
		Co., Louisville, Ky.	Salem	.9459	43.63	0.0	Natural.
1688	Crescent	Ohio Falls Ex- tract Co					
1760		Louisville, Ky. Atlantic Chem.	Salem	.9792	16.98	0.43	Natural.
1764	Purity	Co., Chicago, Ill. Banner Ext. Co.	Indianapolis.	.9692	26.77	0.0	Naphthol yellow.
1765	Special	Cincinnati, O. Souders Mfg. Co.,	Indianapolis.	.9567	36.89	0.0	Tropæolin.
1768	Concentrated	Dayton, O.	Indianapolis. Indianapolis.	.9222 .9754	55.97 20.80	0.0	
1820 1834		H. B. McCord H. M. Phillips.	Auburn	.9125 .9314	60.30	0.31 1.24	Natural. Natural.
1848		Housworth Bros.	Auburn Elkhart	.8566	51.63 82.69	3.80 3.80	Tropæolin.
1872 1883	••••••	Lentral Drug Ca	Elkhart	.8371 .9387	89.05 47.83	3.80 0.0	Natural. Natural.
1921		H. N. Jenner	Elkhart Goshen	.8472	85.87	4.83	Natural.
1932	•• • • • • • • • • • • • • • • • • • • •	F. J. Goldman. H. N. Jenner O. J. Beeson G. W. Rule.	Goshen	.8965	67.32	1.93	
1948 1957	•••••	Public Drug Store	Goshen South Bend	.8467 .8206	86.04 93.77	5.60 3.50	Turmeric. Dinitrocresol.
1986		Coonley & Co	South Bend South Bend	.8935	68.52	1.87	Dinitrocresol.
2020 2062	•••••	R. P. Milton . T. H. Boyd & Co Bicknell & Co	Laporte	.8876 .9126	70.93 60.25	2.37 .56	Dinitrocresol. Natural.
2123 2136		Bicknell & Co	Hammond	.8401	87.82	1.12	Dinitrocresol.
2136 2146		J. W. Weis M. Kolb	Hammond	.8209 .8298	93.77 91.23	5.00 3.30	Dinitrocresol. Natural.
2165	•••••	Summer's Phar-					
2176		macy Corner Drug	Hammond	.8365	89.24	3.85	Turmeric.
2188		Store	Valparaiso	.8424 .8264	87.37 92.24 93.77	2.03	Natural. Tropæolin
2238		Ben Fisher	Logansport.	.8209	93.77	10 40 6.56	Dinitrocresol.
2249 2261	•••••••	W. O. Letherman Ben Fisher G. W. Hoffmann W. H. Porter	Logansport Logansport	.9418 .9072	46.14 62.69	0.0 .32	Dinitrocresol. Dinitrocresol.
2277	••••••••	Red Cross Phar-					
2297		macy M. W. Murphy	Logansport Delphi	.9051 .8492	63.64 85.19	3.25 5.77	Natural Dinitrocresol.
2311		Lytle & Orr	Delphi	.9457	43.75	0.0	Dinitrocresol.
2323 2373		Lytle & Orr W. W. Johnson . Wells Yeager	Lafayette	.821 5	93.62	2.81	Natural.
2393		Best Co Schultz & Bos-	Lafayette	.866 5	78.93	2.56	Turmeric.
2399		well Anderson Drug	Lafayette	.8329	90.32	1.56	Turmeric.
_	•••••••	Со	Anderson	.8451	86.58	4.30	Dinitrocresol.
2460 2483	••••••	Buck & Brickley. People's Drug Co.	Anderson Muncie	.8904 .8285	69.75 91.60	1.60 6.40	Natural. Turmeric.
2520		V. E Silverburg .	Muncie	.8361	89.36	2.48	Natural.
2544	•••••	Physicians Drug Store	Muncie	9321	51.27	0.0	Turmeric.
2554		W. H. Bereley	Alexandria	.8398	88.19	7.00	Turmeric.
2581 2610		E. C. Robinson Stringfellow & Co	Alexandria Elwood	.9085 .8257	62.07 92.45	0.0 8.06	Natural. Tropœolin.
2621		F. W. Green J. H. Kute	Elwood	.8381	92.45 88.73	3.50	Natural.
2628 264 ⁶		J. H. Kute F. L. Saylor	Elwood Elwood	.8544 .8857	83.46 71.70	1.06	Turmeric. Dinitrocresol.
2659		W. Cogswell	Elwood	.8255	92.51	2.65	Natural.
2649		Jay Bros L. Mehlig	Kokomo Kokomo	.8918	69.19	1.50	Dinitrocresol.
2685	••••••	L. Meniig	VOROWO	.8269	92.08	0.20	Dinitrocresol.

Laboratory Number.	Brand.	Manufacturer.	Where Collected,	Specific Gravity.	Alcohol by Volume.	Lemon Oil.	Color.
2699		W Santt	Kokomo	.8310	90.88	5.90	Dinitrocresol.
2709		W. Scott Hollowell & Ryan	Kokomo	.9400	47.13	0.0	Dinitrocresol.
2757		F. H. Hubbard	Kokomo	.9301	52.25	.20	Natural.
2770		J. C. Lindsay	Tipton	.9465	43.26	0.0	Tropæolin.
2779		Moore Bros		.8202	93.95	3.44	Natural.
2779 2794 2806		S. Rosenthal L. T. Harker	Tipton	.9188 .8470	41.95 85.94	0.0 1.56	Tropocolin. Turmeric.
2857		A. B. Carr	Indianapolis.	8214	93.64	4.68	Natural.
2882		L. T. Harker A. B. Carr F. H. Carter Weber Drug Co.	Indianapolis.	.8223	93.41	4.81	Natural.
2945 2999	"Daniel War	Weber Drug Co	Indianapolis	.8210	93.75	3.98	Natural.
2000	Revolution	W. H. Hoyt & Co. Chicago	Kokomo	.9138	59.72	1.03	Natural.
3002	Pure	Arctic Mfg. Co.,			ŀ		
		Grand Rapids	Kokomo	.9633	53.03	0.0	Dinitrocresol.
3007	Sailor's	Atwood & Steele.	W.hama	0165	E0 E0	.50	Dinitrocresol
3015	Jenning's	Jersey Extract	Kokomo	.9165	58.58	250	Dinitroclesor
COLO	acaning a	Co., Grand Rap-	Acres de la		1		
100	3.5 W. 3.5 W. 1	T. H. Johnson	Kokomo	.9554	37.76	0.0	Natural.
3035	Schmidt'sPure	T. H. Johnson		,	l		
		Mfg. Co., De- trot, Mich	Ft. Wayne.	.9460	43.56	.02	Turmeric.
3154	Rival	Duran & Kagner.	Pt. Wayne.	.5100	80.00	.02	I WI III OI I O.
	The state of the s	Chicago, Ill.	MichiganCity	.8777	74.82	2.83	Natural.
3171	Special	Chicago, Ill. Lakota Mfg. Co., Chicago, Ill.	MI-11 00	0000	07.00	امما	Madamal .
3185	Epicure	Chicago, III.	MichiganCity	.9680	27.86	0.0	Natural.
9100	(Comp.'	Stewart & Co	Hammond	.9676	28,22	0.0	
3186	American	Stewart & Co American Chemi-	200000000000000000000000000000000000000			1	
	100000000000000000000000000000000000000	cal Works, Chi-		07700	00.00		N7 - 4 1
3276	Perfection	Cincinnati Ex-	Hammond	.9732	22.92	0.0	Natural.
0210	I ettection	tract Co., Cin-	Name of Street, or		ļ	1	
1		tract Co., Cin- cinnati, O	Indianapolis.	.9631	32.11	0.0	
3278	Pure Concen-	W. Inner C.			Į.		
	trated	Hulman Co., Terre Haute	Indianapolis.	.8560	82.69	4.40	Dinitrocresol.
3365		Crescent Extract Co., New York Standard Mfg.Co.,	Indiana polis.				
	100000000000000000000000000000000000000	Co., New York	Columbus	.9735	22.64	0.0	Natural.
3396	·····························	Decatur, Ill.	Columbus	.8507	84.70	4.20	Natural.
3398	Pro Bond	M.O'Connor&Co.,	Columbus	.0001	01.10	1.20	Matural.
	530000000000000000000000000000000000000	Indianapolis	Columbus	.9602	34.40	.56	Natural.
3413		Eddy & Eddy,	0.1	onoe.	70 95	0.0	Dinitrocresol.
3433	Monogram	J. C. Perry & Co.,	Columbus	.8736	76.35	0.0	Dinitrocresor.
	monogram	Indianapolis	Columbus	.8997	65.94	1.60	Natural.
3439	Chapman's	Chapman& Smith					m
3461	High Grade	Co., Chicago, Ill.	Columbus.	.8863	71.46	4.06	Tropæolin.
3401	nigh Grade	Eddy & Eddy, St. Louis	Columbus	.8363	89.14	10.00	Dinitrocresol.
3464	Deeter's		200000000000000000000000000000000000000				-
	Double	T D Dantes Co	100	1	1		
	Strength	J. P. Deeter Co., Chicago, Ill.	Columbus	.9587	35.51	0.0	
3465	Lyon's Old Re-		Oolumbus		00.01	0.0	
	liable	W. W. Lyons & Sons, North		!		ļ į	
	100	Sons, North	Columbus	.9754	20.80	0.0	Natural.
3542	Valuable Committee and	A. G. Baldwin	Noblesville	.9330	50.82	0.0	Natural.
3558		Charlton,	210010011110				
0000		Indianapolis	Indianapolis.	.9829	13.52	1.2	Natural.
3606		Pettis Dry Goods	Indianapolis.	.8353	89.61	5.87	Turmeric.
3613	Empire State	Geo. J. Hammel . J. H. Forbes,	Indianapolis.	.9601	34.47	0.0	Turmeric.
3618		J. H. Forbes,	E - T - T - T - T - T - T - T - T - T -				
3658		ot. Louis	Indianapolis.	.9167	43.13	0.0	Dinitrocresol.
3008		Zipp Mfg. Co., Cleveland, O.	Indianapolis.	.8369	89.11	7.00	Dinitrocresol.
3659		Zipp Mfg. Co.,	I indianapolio.		ı	1	
0000	6.4	Zipp Mfg. Co., Cleveland, O.	Indianapolis.	.8324	90.46	6.88	Dinitrocresol.
3662	Perfection	Cincinnati Ex-		[l		
	P. S.	tract Co., Cin- cinnati, O	Indianapolis.	.9624	32.65	0.0	Dinitrocresol.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Specific Gravity.	Alcohol by Volume.	Lemon Oil.	Color.
3696	Chapman's	Chapman-Smith, Chicago	Indianapolis.	.8642	79.65	6.75	Dinitrocresol.
3721		Indianapolis	Indianapolis.	.9401	47.08	2.68	Tropæolin.
3774		Van Duzer & Co., New York	Indianapolis.	.8127	87.34	6.40	Turmeric.
3846 3848	·····	C. O. Maple	Bloomington.	.9199	57.02	0.0	
3853 3386		Drugs	Bloomington. Bloomington.	.8328 .8308	90.35 90.93	1.09 4.68	
3879		ville	Jeffersonville	.9399	41.18	0.0	
3890 3896		wille	Jeffersonville New Albany.	.8266 .9313	93.85 51.68	8.10 .20	Natural.
3904		B. Doolittle, Jeffersonville C. E. Crecelius	Jeffersonville New Albany.	.9624 .9385	33.65 47.94	3.84 0.0	Tropsolin.
3908 3921		McDonald-Stock- dell Co Floyd Parks	New Albany . Jeffersonville	.8271 .8927	92.02 68.83	4.50 1.50	Tropæolin. Natural.
39.28		Doherty's Drug Store	Jeffersonville	.8430	87.24	5.30	Turmeric.
3935	Souders' Reg- ular	Royal Remedy & Extract Co.,	N.11	0040			
3936	Ko-We-Ba	Dayton, O Kothe, Wells & Bauer, Indian-	Noblesville	.9346	50.01	0.0	Natural.
2520 2544		apolis	Noblesville Muncie Muncie Indianapolis.	.9564 .8361 .9321	37.03 89.36 51.27	.40 2.48 0.00	Natural. Natural. Turmeric.
4856 4866 4916	Red Cross	John Doltean T. H. & B. Amt.	Indianapolis. Indianapolis.	.9319	51.38	0.0	Naphthol yellow.
4990	Double	Lafayette Chem. W'ks, Lafayette J. P. Dieter &	Indianapolis.	.9796	16.46	2.7	Tropælin.
5029	Strength Messina	Son, Chicago Jennings & Smith	Indianapolis.	.9651	30.44	0.0	Dinitrocresol.
5039	McCook &	Grand Rapids	Frankfort	.9548	38.16	.3	Not natural.
5041 5064	Baker's Robb's Crown	Souders, Dayton. W. F. Robb F. A. Frohnappel	Crawf'dsville Crawf'dsville Cambridge	.9230 .9800	47.82 16.26	1.0 .3	Naphthol yellow. Naphthol yellow
5065	Happer's	Happer, Findlay,	City Cambridge	.9895	7.72	.5	Dinitrocresol.
5077	Napoleon	Ohio Forbes Chem. Co	City	.9697	26.33	0.0	Not colored.
5103	Quantity	Chicago	Indianapolis.	.9927	5.25	2.3	Naphthol yellow.
5157	Quality	Gus. Klippel WabashBak.Pow.	Indianapolis.	.9806	15.67	1.	Not colored.
521 0	High Grade	Co., Wabash Johnson Drug Co. Rushville	Edinburg Rushville	.9079 .9806	62.36	1.0 2.3	Natural. Colorless.
5 26 6		Parke Davis & Co.	Muncie	.9278	53.48	.3	Natural.
5 327		Geiger-Tinney, Indianapolis	Attica	.8990	66 25	3.6	Tropselin.
5360	Empire	McNeil Higgins Co., Chicago	Covington	.8170	94.76	0.0	Coal tar.
5363 5703	Gold Seal	C. Callahan Co. Lafaye te F. W. Green, El-	Covington	.9189	57.45	.3	Natural.
5825		wood	Elwood Ft. Wayne	.8718	77.00	3.24 3.4	Natural.
5854 5865			Ft. Wayne Ft. Wayne Ft. Wayne	.9353 .9145	49.64 44.5	3.4 1.2 2.8	Not natural.
591+ 5972	Keystone Enterprise	A. R. Walter Wabash Bak. Pow.	Ft. Wayne	.9473	43.8	.2	Tropælin.
5975	Koon	Co., Wabash Brinkmeyer- KuhnCo.Indpls	Greencastle	.9239	55.2 49.1	1.0	Coal tar.
	1	wann Co. Inapis	Greencastle	.9309	1 49.1	.4	Naphthol yellow.

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LEMON EXTRACTS-ILLEGAL-Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Specific Gravity.	Alcohol by Volume.	Lemon Oil.	Color.
6005		Lafayette Chem.		1	1		
		W'ks,Lafayette		.9757	20.5	.2	Coal tar.
6011 6018			Goshen	8490 .9493	85 27 41.70	3.4	Coal tar. Not natural.
6021		Steele-Wideles,	O OBLETI	.5150	41.10		Not hatural.
		Chicago Franklin Mac-	Goshen	.9518	40.30	5.1	Dinitrocresol.
6033	Telmo	Franklin Mac- Veagh, Chicago	Carban	.9594	35.0	5.1	Coal tar.
6060	•••••	vesgn, Cnicago	Goshen Elkhart	.9469	43,00	0.0	Colorless.
6664			Elkhart	.9514	40.55	00	Natural.
6074			Elkhart	.8367	89.16	2.5	Not natural.
6085	Swing	B. Desemburg Co.	D				D
6068	•	Kalamasoo	Elkhart	.8655 .8450	79.32 81.36	5 6 2.3	Dinitrocresol.
6144			South Bend	.8490	85.27	5.0	Dinitrocresol.
6128			South Bend	.9412	46,46	1.7	Dinitrocresol.
6136	Baker's Pride.		South Bend	.9600	34.52	1.3	Aniline.
6257	Baker's Pride.	Terre Haute Ex	.		l	ا ا	
6262	Cole's Leader.	& Chem. Co Wabash Bak.Pow.	Brazil	• • • • • •	•••••	.9	Not natural.
عباعد	Cole a Deadel.	Co., Wahash	Brazil	.9254	54.48	1.0	Coal tar.
8267	Keystone	Co., Wabash Bement Rea Co.					1
		Terre Haute	Brazil	.8768	75.14	5.0	Tropælin.
8271	Our Special	Reid Henderson	Brazil	mea	10.00		Coal tar.
5291	American	Co., Chicago American Ex. Co.	Brasii	.9766	19.67	.5	COMITAT.
0201	American	Cincinnati. O	Terre Haute.	.9766	19.67	0.0	Tropælin.
8351		McNeil Higgins Co., Chicago					
		Co., Chicago	Laporte	.9725	13.92	0.0	Dinitrocresol.
368	Old U.S. P		Hammond	.8'06	87.96	4.4	Natural.
3383 3394	Blossom	McNeil Higgins	Valparaiso	.9458	43.71	0.0	Naphthol yellow
7504	~	Co., Chicago	Valparaiso	.9535	39.80	0.0	Naphthol yellow
3410			Plymouth	.9482	42.29	1.9	Naphthol vellow
417			Plymouth	.8266	92.18	4.3	Natural.
5444	•••••	Shore Medicine	Dankastan	.9404	46.81	3.4	Artificial.
3473	Battle King	Co., Rochester Huntington Gro.	Rochester	.5101	10.01	3.4	Artinciai.
210	Same will will	Co.	Rochester	.9621	32.87	0.0	Artificial.
3491			Peru	.9167	58.80	.9	Arcificial.
533	• • • • • • • • • • • • • • • • • • • •		Michigan City	.8502	84.88	2.2	Dinitrocresol.
5558 577	••••••		Whiting	.9547	38.22	3.1	Not natural. Naphthol yellow
5577 3581	Mammoth	Franklin Mac-	nammona	.8490	85.27	.5	Maburnor Asilom
		Veagh, Chicago	Hammond	.9885	8.64	0.0	Naphthol yellow
5584	Epicure	S. E. Wart & Co.					
		Pittsburg	Hammond	.9540	38.78	0.0	Artificial.
3601		Felix W. Klemn.	Hammond	.9525	39.80	.3	Naththol yellow

VANILLA EXTRACTS.

We have examined 189 samples of vanilla extract, and found 53 to be pure and 136, or 71.9 per cent., adulterated or below standard. Many druggists' samples were made from the vanilla bean, but because of faulty methods of preparation are low in vanillin content and must therefore be classed as impure. A true vanilla extract is made by macerating the vanilla bean with sugar and extracting the mass with diluted alcohol. Adulteration of vanilla extract consists of substituting, wholly or in part, the inferior and cheaper Tonka bean for the vanilla bean, or the addi-

tion of the artificial coumarin to weak extracts of the true bean, or even preparing solutions of artificial vanillin or artificial coumarin in dilute alcohol, colored with caramel or coal tar dye to represent the true extract.

Extract of Tonka has a decided value as a flavoring medium, and if compounded with extract of vanilla, can be sold if labelled "Extract of Vanilla and Tonka."

VANILLA EXTRACTS-LEGAL.

Laboratory Number.	Brand.	Manufacturer.	Town.	Vanillin.	Remarks.
3970 3984 3987 3996 3999 4007	Owl Premium. Cub.	Boller Ice Cream Co	Marion	.15 .05 .05 .125 .137	Pure. Pure. Pure. Pure. Pure.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Vsvillin.	Coumarin.	Caramel.	Remarks.
131 667	Link's	Link & Nelson W.C. Watien	Brazil Vincennes	.05 .05	None	None	Pure. Pure.
177	Chapman's.	Smith Co	Brazil	.1125	None	None	Pure.
1767 3414	Diadem	Schnull & Co Eddy & Eddy,	Indianapolis.		None	None	Pure.
3562		St. L uis Dr. Price's	Columbus		None	None	Pure.
650b 1489	St. George	Chicago Lewis Seitz Gro-	Indianapolis.	.1125 .10	None	None	Pure. Pure.
2928	St. George	cery Co	Boonville Indianapolis.	.0975	None	None	Pure. Pure.
2978		Navin's Phar-	Indianapolis.		None	None	Pure.
3522		macy, No. 1 Will E. Axline	Noblesville		None	None	Pure.
4612	Dean's	Wabash Bak. Pow.Co., Wabash	Roachdale	1.0500	None	None	Pure.
4680 4946	••••	John Wyeth & Bros. Phila	Laporte	.1500	None	None	Pure.
4940		Lafayette Chem. Wks, Lafayette.	Indianapolis.	.100	None	Present.	Properly la- beled.
4705 5000	Van Duzer.	Hollowell&Ryan Van Duzer Ex	Kokomo	.250	None	None	Pure.
5037		Co., New York. Shapp & Dolme	Indianapolis.		None		
5067		Chicago G. E. Callaway.	Crawfords'lle		None		Pure.
5146	Purity	Cambridge City Decatur Ex. Co	Camb'ge City	1	None		
		Decatur, Ill.	Franklin	0875	None	None	Pure.

VANILLA EXTRACTS-LEGAL-Continued.

Number.	Brand.	Manufacturer.	Where Collected.	Vanillin.	Coumarin.	Caramel.	Remarks.
156		Wabash Bak. Pow.Co., Wabash	Edipburg	.0625	None	Present.	Pure.
235		Home Remedy Co., Laporte	Laporte		None	None	Pure.
260		Nickey Drug Store	Muncie	.0625	None	None	Pure.
335 345	Hulman's	J. P. Dieter Co Hulman Ex. Co.	Attics	.100	None	None	Pure.
348	Souder's	Terre Haute Royal Remedy &	Attica	.075	None	Present.	Pure.
354		Ex. Co., Dayton D. H. Wallace	Veedersburg. Veedersburg.	.100 .0625	None None.	None	Pure. Pure.
702 707	Royal Blue.	F. W. Green W. J. Quan & Co.,	Elwood	.0625	None	None	Pure.
717	Zipp's	Chicago Zipp Mfg. Co.,	Elwood	.100	None	None	Pure.
804 806		Cleveland Chas. W. Raiston	Alexandria Evansville	.0625 .0625	None	None	Pure. Pure.
929	•••••	Home Remedy Co., Laporte McMonagle &	Laporte	.0200	None	None	Pure.
932	Puritan	Rodgers Moellering Co	Fort Wayne	0875 .0875	None None	None None	Pure. Pure.
973	Enterprise .	Wabash Bak. Pow.Co., Wabash	Greencastle	.0800	None	None	Pure.
986	Monogram .	J. C. Perry & Co., Indianapolis	Greencastle.	.1125	None	None	Pure.
5036	LightHouse	National Gro. Co., Chicago	Goshen	.100	None	None	Pare.
140		Archie Mfg. Co., Grand Rapids	South Bend	.075	None	Present	Pure.
3250	Coon	Thompson & Tay- lor Co., Chicago.	Indianapolis.	.1125	None	None	Pure.
5265	Cole's Leader	Wabash Bak. Pow.Co., Wabash Bement Rea Co.,	Brazil	.2500	None	None	Pure.
1266	Keystone	Terre Haute	Brasil	.1250	None	None	Pure.
3312 3396	01	Jos. Strong & Co., Terre Haute	Terre Haute	.0875	None	None	Pure.
1360 1443	Opal	J. A. Tolman, Cnicago Shore Med. Co	Valparaiso Rochester	.250 .1125	None	Present	Pure.
585	Renroh	Henry Horner Co., Chicago	Hammond	.0875	None	None	Pure.
586	Klemn's	F. W. Klemn, Chicago	Hammond	.100	None	Present	Pure.
602	Seal	Kenwood Pres. Co., Chicago	Hammond	.1125	None	None	Pure.

VANILLA EXTRACTS-ILLEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Vanillin.	Coumsrin.	Caramel.	Remarks.
30		Reid, Henderson	Franklin	.0625	None	None	Van'lin syn-
50	Climax	Roads Bros. Mfg.	Anderson	.05	None	Present.	thetic. Van'lin syn- thetic.
57	Superior	Superior Extract	Anderson	.075	None	Present.	
1993	Gilt Edge	Berdan & Co	Huntington	.075	None	Present.	Van'lin syn- thetic.

VANILLA EXTRACTS-ILLEGAL-Continued.

						1	
Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Vanillia.	Coumarin.	Caramel.	Remarks.
1304	Venus	Royal Rem. & Ex.Co	Huntington	0.25	Present.	Present.	Van'lin syn
1406	Mader's	Wabash Bak. Pow. Co	Huntington	.10	Present.	Present.	thetic. Van'lin syn-
1430	Club House.	Franklin Mc- Veagh Co	Huntington	.05	None	Present.	thetic. Colored with
1438	Hoosier	Atwood & Steele.	Huntington	.075	Present.	Present.	caramel. Van'lin syn-
132	Dauntless .	Hulman Extract	D!!	.00	Danasant	Drasant	thetic. Artificial.
135	Shaffer's	Co	Brazil	.075	Present.	Present.	Colored with
642		H. J. Werker	Vincennes	.0375	None	Present.	caramel. Colored with
162	Napoleon	Forbes Chem. Co.	Brazil	.00	Present.	Present.	caramel. Artificial.
163	Keystone	Bement, Rea&Co. Frank Tea &	Brasil	.00	Present.	Present.	Artificial.
179	1102	Spice Co	Brazil	.10	Present.	Present.	Van'lin syn- thetic.
676 192	Pure and	R. G. Moore	Vincennes	.0875	None	Present.	Colored with caramel.
	Sure	FrankTea&Spice Co	Terre Haute	.0375	Present.	Present.	Van'lin syn-
. 194	VanDuzer's Fruit	Van Duser & Co	Terre Haute	.025	None	None	thetic. Pure, low
690		C. S. Miller	Vincennes	.025	None	Present.	Pure, low
196	Genesee	Sprague, Warner	Vincennes	.00	Present.	Present.	Van'lin syn-
199	Snow White	Franklin Me- Vesgh Co Lafayette Chem.	Terre Haute	.0675	Present.	None	thetic. Van'linsyn-
1761	***	Works	Indianapolis.	.00	Present.	Present.	thetic. Van'linsyn- thetic.
1766	Koon	Brinkmeyer, Kuhn & Co	Indianapolis.	.0375	Present.	Present.	Van'lin syn- thetic.
3316	Pure and Sure	Frank Tea & Spice	Columbus	.1125	Present.	Present.	Artificial.
226		E. H. Bindley & Co	Terre Haute	.00	Present.	None	Artificial.
3366		Crescent Extract	Columbus	.00	Present.	Present.	Van'lin syn-
270	Norton's Standard.	Bement, Rea & Co	Terre Haute	.00	Present.	Present.	thetic. Van'lin syn-
274	Ideal	ter	Terre Haute	.125	Present.	Present.	thetic. Van'lin syn-
337	Bey's Pure.	Frank Tea & Spice	Vincennes	.075	Present.	Present.	Van'lin syn-
340	Jewel	E. Bierhaus	Vincennes	.00	None	None	thetic.
3394 3397	King B	Standard Mfg. Co Ulmann, Dreifus	Columbus	.00	Present.	Present.	Artificial.
348	Special	Co Eddy & Eddy	Columbus Vincennes	.00 .05	Present. Present.	Present. None	Artificial. Van'linsyn-
351	Oriental	Jas. H. Forbes	Vincennes	.00	Present.	Present.	thetic. Artificial.
357	Silver Shield	John N. Bey	Vincennes	.05	Present.	Present.	Van'lin syn- thetic.
360	Colored	Hulman & Co	Vincennes	.075	Present.	Present.	Van'linsyn- thetic.
361 363	Dolmon	E. Bierhaus & Sons Frankin Extract	Vincennes	.0625	None	Present.	Van'linsyn- thetic.
3419	Delmar Golden Rod	Co	Vincennes	.00	Present.	Present.	Artificial.
3575	Golden 1000	Bauer	Columbus	.25	Present.	Present.	Van'lin syn- thetic.
384 837		John Bey & Co John Lavel & Son	Vincennes Evansville	.00 .05	None None	Present. Present.	Artificial. Colored with caramel.

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· VANILLA EXTRACTS-ILLEGAL-Continued.

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Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Vanillin.	Coumarin.	Caramel.	Remarks.
411	Pure Food .	Standard Chem.					
412	Perfection	Co	Evansville	.00	None	Present.	Artificial.
		Co	Evansville	.025	Present.	Present.	Van'lin syn- thetic.
869 430	Crane	Meek & Albers Royal Rem. & Ex.	Evansville	.05	Present.	None	thetic. Vsn'linsyn- thetic.
434	Silver Seal.	Co Walsh, Boyle &	Washington	.0375	Present.	Present.	Van'linsyn- thetic.
442		Co	Washington.	.00	Nопе	None	Artificial.
450	Gilt Edge	Frank Tea&Spice	Washington	.00	Present.	Present.	Artificial.
468 926		L. V. Logan Dawson & Boyce.	Washington Washington Mt. Vernon	.00 .00 .00	Present. Present.	Present.	Artificial. Artificial.
427e 1131	Tronic	Dawson & Boyce.	Mt. vernou	.075	None Present.	Present. Present.	Artificial. Van'linsyn-
1132	Tropic Fruit Gilt Edge	A. B. Judson	Oakland City Oakland City	.00	Present. Present.	·Present. None	thetic. Artificial. Artificial.
943		D. & H. Rosen- baum.	Mt. Vernon	.075	None	Present.	Colored with
1161	Diamond	Ragan Bros	Evansville	.00	Present.	Present.	caramel. Artificial.
1162	Crystal Peari	Evansville Chem.	·			11000110	minucial.
965		Works Porter the Drug-	Evansville	.00	Present.	Present.	Artificial.
982		gist Blue Drug Store.	Peru Peru	.00 .025	Present. None	Present. Present.	Artificial. Pure, low
3612	Splendid	J. H. Forbes	Indianapolis.	.05	Present.	Present.	grade. Van'lin syn-
1196	Pure		Princeton	.09	None	None	thetic. Artificial.
3615 1004	Empire State	Geo. J. Hammel .	Indianapolis.	.025	Present.	Present.	Van'lin syn-
1011	••••	Chickasaw Phar- macy	Peru Wabash	.0375 .00	None	Present.	thetic. Artificial.
3657 1244	10c Special.	Bradley Bros Frank Tea &	Indianapolis.	.00	None Present.	Present. None	Artificial. Artificial.
3663	Perfection.	Spice Co Cincinnati Ex.Co.	Mt. Vernon Indianapolis.	.00	Present. Present.	Present. Present.	Artificial. Artificial.
1056 1286	Reliable	Butterbaugh&Co. Grocers' Chem.	Wabash	.075	None	Present.	Col. with
1086		Schaefer &	Evansville	.00	Present	Present.	Artificial.
3718		Schaefer Indpis. Fancy	Huntington	.0375	None	None	Artificial.
		Gro. Co	Irvington	.075	Present.	Present.	Vanil'n syn- thetic.
3719	•••		Irvington	.075	Present.	Present.	Vanil'n syn-
1346	Lien	H. Karn & Co	Evansville	.125	Present.	Present.	Vanil'n syn- thotic.
1847	Sauer's	C. F. Sauer Co	Evansville	.1125	None	Present.	Col. with caramel.
3772 1188	• • • • • • • • • • • • • • • • • • • •	П С С	Indianapolis.		None	Present	Col. with caramel.
1203		H. G. Sommers	Ft. Wayne	.0875	None	Present.	Col. with caramel.
7164		Meyer Bros. & Co.	Ft. Wayne	.0675	None	Present.	Col. with caramel.
1504	Oriental Regular	Bement & Seitz Royal Remedy &	Huntingburg.	.025	Present. Present.	Present. Present.	Artificial. Van'lin syn-
-350		Extract Co	Noblesville	.025	None	Present.	Var'lin syn-
787B 1525	Green City	G. C. Pharmacy		.025	None	None	thetic. Low grade.
738a		Co	Jeffersonville	.00 .025	Present.	Present. None	Artificial. Low grade.
1532 750 _A	Crescent	A. Holmes	Jeffersonville	.00	Present. None	Present.	Low grade. Low grade.

VANILLA EXTRACTS-ILLEGAL-Continued.

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Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Vanillin.	Coumarin.	Caramel.	Remarks.
1839 1551	Kingan's	H. M. Phillips	Auburn	.00	None	Present.	Low grade.
1574	Best Cherokee	Kingan Bro A. Englehard &	Jeffersonville Jeffersonville		Present.	Present.	Van'lin syn- thetic.
1579	Model	Son E Ottenheimer		.00	Present.	Present.	Artificial.
1867		Bros Central Drug Store	Jeffersonville Elkhart	.075	None	Present.	Artificial. Col. with
1889		F. J. Goldman	Elkhart	.075	None	Present.	caremel. Col. with
1618			New Albany.	.00	Present.	Present	caramel. Artificial.
1619	Big 5	Banner Extract	New Albany.	.25	Present.	Present.	Artificial.
1917 1664	King B	Ulmann, Dreyfus	Goshen	.0375	None	Present.	Low grade.
1685	Better than	& Co Ulmann, Dreifus	Salem	.0375	Present.	Present.	Van'lin syn- thetic.
	Best	de co	Salem	.0375	Present.	Present.	Van'lin syn- thetic.
201 5		R. P. Milton	South Bend	.10	None	Present.	Col. with
3000 3006	Revolution. Sailors	W. H. Hoyt & Co. Atwood & Steele.	Kokomo Kokomo	.00	None Present.	None Present.	Artificial. Artificial.
3036	Schmidt's Pure	T. H. Johnson	7. 77				
2067		Mfg. Co	Ft. Wayne	.05	Present.	Present.	Van'lin syn- thetic.
2990 2990	•••••	T. H. Boyd & Co. Woodson & Wil- lits.	Laporte Michigan	.05/5	None	Present	Low grade.
		1166	City	.05	None	Present.	Col. with
2161 3170	Special	Dakota Mfg. Co	Michigan	.00	None	Present.	Artificial.
3277	Perfection .	Cincinnati Ext.	City	.00	Present.	Present.	Artificial.
2299		Co	Indianapolis. Delphi	.00 .025	Present. None	Present. None	Artificial. Low grade.
2316 2357		Lytle & Orr J. D. Bartlett	Delphi Lafayette	.0375	None	None Present.	Low grade. Artificial.
2461 2487		People's Drug	Anderson	.0375	None	Present.	Low grade.
2515		Store V. E. Silverburg	Muncie	.0375 0375	Present. None	None	Low grade. Low grade.
2620 2631		T. W. Green J. H. Kute	Elwood	.0875	None	Present. Present.	Low grade. Artificial.
2716 2728		Hollowell & Ryan Hutchings &	Kokomo	.00	None	None	Artificial.
2793		Murphy S. Rosenthal	Kokomo Tipton	.00 .175	None Present.	Present. Present.	Artificial.
2814		H. Mehlig	Tipton	.075	Present.	None	(butyric ether). Van'lin syn-
2898		H. J. Huder	Indianapolis.	.0375	None	Present.	Col. with -
3501	Pod C	C. L. Mîtchell	Noblesville	.00	None	None	caramel. Artificial.
4857 5020	Red Cross Perfection.	Shafer & Co	Indianapolis. Frankfort	.075 .025	Present. Present.	Present. Present.	Adulterated. Adulterated.
5167	Gold Arrow	Newton Tea & Spice Co., Cin-				ĺ	
5170	High Grade.	cinnati Robbins & Co Greensburg, Md.	Columbus	.200	Present.		Adulterated.
5242	Our Best .	Dest & Son	Columbus Muncie	.200 .100	Present. None	Present. None	Adulterated. Not genuine.
5296		Sachs-Penders Co., Dayton	Anderson	.0750	Present.	Present.	Improperly labeled.
5341	Mammoth	Franklin McVeagh, Chi- cago	Williamsport	.000	Present.	Present.	Artificial.

VANILLA EXTRACTS-ILLEGAL-Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Vanillin.	Coumarin.	Caramel.	Remarks.
5977	Standard	Standard Chem- ical Works, St.		·			
5979	Vanilla	Louis	Greencastle	.075	Present.	Present.	Improperly labeled.
	Flavor	Cincinnati Ex.	Greencastle	.100	Present.	Present.	Improperly labeled.
6054	Acme	Acme Ex. Co.,	Elkhart	106	DA	Dunnana	
6086	Swing	Jackson B. Dessenburg		.125	1		Adulterated.
A 454		Co., Kalamazoo.	Elkhart	.0375	None	None	Below stan- dard.
6474		Huntington Gro.	Rochester	.1125	Present.	Present.	Adulterated.

MISCELLANEOUS FLAVORING EXTRACTS.

Under this head we have classed a variety of products occasionally used for flavoring cakes, confections and dessert preparations.

But four out of twenty-four samples examined were legal. In most cases the goods were misbranded or improperly labeled, most of the pineapple, banana, strawberry, raspberry, peach extracts, etc., being sold as pure fruit extracts.

As a matter of fact it is impossible to make them from the fruits, and they must be made from solution in alcohol of synthetic organic preparations known as compound ethers. Some of the compound ethers possess a remarkable resemblance to fruits. Butyric ether has a distinct pineapple flavor, and a mixture of amyl acetate and butyric ether counterfeits very closely the flavor of the banana.

If these extracts are marked "Artificial Fruit Flavors" they can be legally sold.

BANANA EXTRACT-ILLEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Specific Gravity.	Alcohol, per cent. by Vol.	Color.	Remarks.
63	Standard	Jaques Atwood Co., Chicago and St. Louis	Elwood	.9542	38.60	Naphthol yellow	Not properly
3722		Geiger-Tinney Co.,Indianapolis	Irvington	.9075	62.55	Tropæolin.	labeled. Not properly labeled.

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STRAWBERRY-LEGAL.

Aboratory Number.	Brand.	Manufacturer.	Place Where Collected.	Specific Gravity.	Alcohol per cent. by Vol.	Color.	Polarisa- tion.	Orange Oil,
1412	Hopper's	Hopper & Co., Findlay, O.	Huntington	.9109	60.99	Anilin dye	Proper beled	ly la-
'		STRA	WBERRY—IL	LEGA	L.		•	
3720		Geiger-Tinney Co.,Indianapolis	Irvington	.9075	62.55	Anilin dye	Not pr	operl;
!	<u> </u>	PΠ	NEAPPLE-LE	GAL.		•		
1410	Cooks and Bakers	Souders & Co., Dayton, O.		.9380	48.20	Dinitro cresol	Proper beled	ly la-
		PIN	EAPPLE—ILI	EGAI	۵.	•		
285		Geiger-Tinney Co.,Indianapolis	Martinsville.	.8956	67.69	Tropseolin.	Not prolabel	operiy
20	Old Home	J. C. Grant Chemical Co., Chicago	Columbus	.9646	30.49	Naphthol yellow	Not pri	operly
1409	Mader's	WabashBak.Pow- der Co., Wabash, Ind	Huntington	.9511	40.41	Colorless	Not prolabel	operl; ed.
1439	Standard	Jaques Atwood & Co., Chicago	Huntington	.9345	42.52	Naphthol yellow	Not prolabel	operl; ed.
3723		Geiger-Tinney Co.,Indianapolis	Irvington	.9144	59.59	Tropæolin.	Not prolabel	operly ed.
		MISCELLAN	EOUS EXTRA	cts-	ILLE	GAL.		
88	Nectar Ext., "Hopper"	C. H. Hopper & Co., Findlay, O.	Alexandria	.9485	42.12		Not p	roper
1411	Rose Ext	E. W. Gillett, Chicago	Huntington	.8786	74.48		Not p	
1428	Peach Ext., "Club House"	Franklin Mac- Veagh & Co., Chicago	Huntington	.8803	73.81		Not p	roper
6303	Almond	Pettis Dry Goods	Indianapolis.	.9107	61.10		Not p	ed. roperi
8604	Nutmeg	Pettis Dry Goods	Indianapolis.	.8901	69.8 8		Not pr	ea.
3607	Ginger	Pettis Dry Goods	Indianapolis.	.9205	56.77		Not pi	

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ORANGE EXTRACT-ILLEGAL.

								
Laboratory Number.	Brand.	Manufacturer.	·Place Where Collected.	Specific Gravity.	Alcohol. per cent.by Vol.	Color.	Polanisa- tion.	Orange Oil per cent.
56	Standard	Jaques Atwood & Co., Chicago and St. Louis	Anderson	.9457	48.75	Naphthol		
87	"Hopper"	C. H. Hopper & Co., Findley, O.				yellow	+ .2	.075
1437	"Standard"	Jaques Atwood & Co., Chicago	Alexandria Huntington	.9439	69.09 44.80	Natural Naphthol	+ .8	.80
3602		Pettis Dry Goods	nuntington		14.00	yellow	+ .1	.037
5 2 85	Ft. Dearb'n	W. M. Hoyt & Co.	Indianapolis. Anderson	.8472 .9450	85.88 44.18	Natural Not nat- ural, ar-	+ 9.4	3.55
6057		DeBoe-King Co	Elkhart		62 ,82	tificial Not nat- ural, ar- tificial		
4386		Zipp & Co., Cleve-	Michigan City		AL.		+ 30.1	5.64
4522	Hopper's	RAI E. H. Hopper & Co., Findlay, O	SPBERRY—LE	GAL.	55.60	Methyl violet	Proper	
1454		1		.9747	21.49 49.02	Veg. color.	labe	oroperly led.

HONEY.

Of the 35 samples of honey analyzed but six, or 17.1 per cent., were impure. Comb honey is not subject to adulteration, but strained honey is frequently mixed with glucose or sugar syrup. We have found some samples purporting to be pure "White Clover" honey and containing a piece of honey comb, to be nothing but glucose syrup.

HONEY-LEGAL.

1 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5				Polari	sation.	فدا
Number.	Brand.	Manufacturer.	Where Collected.	Di- rect.	In- vert.	Remarks
90		Cleveland Health Food Co.,				
160	Weber's White Clover	Weber Honey Co.,	Alexandria		-20.0	Pur
25°	Warranted Pure	Cincinnati		-16.4 -11.8	-20.4 -14.9	Pur
285	Lamon's	Fred Coffman, Terre Haute. Lamon Gohl Syrup Co.,				Pur
317	Scott's Pure Bees Honey	C M Scott Co. Chicago	Terre Haute .	-14.0	-16.1	Pur
		C. M. Scott Co., Indianapolis	Martinsville.	-12.4	-18.2	Pur
894 803	York's	Geo. W. York, Chicago	Vincennes	-17.4	-18.9	Pur
343	"Heshmia," War-	Geo. W. York, Chicago H. A. Ross Apiary, Evansville	Evansville	- 9.4	- 9.1	Pur
344	J. J. Co-ley	J. S. Tisserand, Evansville.	Evansville	-16.0 -23.2	-17.3 -24.6	Pur
163 155	Vickery Bro	Vickery Bro., Evansville John Sunderman.	Evansville	-17.4	18.9	Pur
		Huntington	Huntington.	-12.6	-17.8	Pur
46	Pure White Clover.	Fred W. Muth Co., Cincinnati	Jeffersonville	-17.0	-19.3	Pur
59		Overbacker Glucose Co.,				
63		Louisville C. A. Weber & Co	Jeffersonville	-19.4	19.8	
70		Cincinnati C. B. Tyrrell, Davison, Mich	Jeffersonville Kokomo	-15.6 -10.0	-18.2 -17.6	Pur
37	Pure Extracted	Walter S. Pouder.	*			
52	White Clover	Indianapolis Durand & Kasper, Chicago.	Indianapolis. Michig'n City	-18.6 - 5.8	-21.5 - 6.3	Pur
65	None Such	McNeil-Higgins, Chicago	Michig'n City	-18.4	-23.5	Pur
140	Scott's Pure Bees'.	C. M. Scott & Co., Indianapolis	Indianapolis.	-13.6	-21.3	Pur
61	•••••	Court House Grocery Co., Indianapolis	Indianapolis.	-11.4	-20.4	Pur
92	Scott's Pure	C. M. Scott & Co.,	-			
67	California Sage	Indianapolis	Irvington Indianapolis.	-13.4 -13.8	-16.5 -19.5	Pur
68	"Basswood," Wis-		- 1			
69	"Buckwheat,"		Indianapolis.	- 9.8	-13.8	Pur
	Michigan		Indianapolis.	-16.2	-19.5	Pur

MAPLE SYRUP.

No other articles come to our tables under such false colors as do maple syrup and sugar. The results of the analyses of 54 well known brands indicate that the real maple syrup rarely or never is procurable and that the syrup sold under that name is a product of the cane instead of the sugar maple. The high price which maple syrup commands because of its peculiar flavor has led manufacturers to prepare all sorts of imitation goods, and the great demand, largely in excess of the normal supply, enables them to sell their spurious products at the price of the true article. Cane syrup, made by dissolving cane sugar in water, is colored with caramel, a burnt sugar, and flavored with decoctions of corn cobs, hickory bark or maple chips and sold to the public under the name of "Fancy Vermont Maple Syrup." Several samples

analyzed have contained glucose syrup, one brand containing over 50 per cent. Maple products, although owing their sweetness to sucrose, the same sugar that is produced by sugar cane or the sugar beet, possess a peculiar aromatic odor and delicious flavor, which renders them much more valuable than ordinary cane sugar products. Since it is this characteristic which fixes the price and creates the demand, as well as furnishes a valuable product for the farmer, we insist that all syrup or sugar sold as maple shall be pure. No compounds of cane and maple can be sold unless marked "cane and maple," with the percentage of each ingredient, and all goods sold as "syrup" in packages bearing pictures of maple grocers or sugar houses shall be considered to be intentionally misleading and misbranded.

MAPLE SYRUP-LEGAL.

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.					Polari	sation.				1 00 .	
Laboratory Number.	Brand.	Manufacturer.	Whe Collec	re ted.	Direct.	Invert.	Sucrose.	Glucose.	Ash.	Soluble Alka- linity as cc n 10 HCl.	Remarks.
493 3	Native Purity	Bellef't'ne. O.	Indpl	8	+59.4	-19.5	59.3	None	.67	5.4	Pure
498 5	Gold Bond	F. N. Johnson, Bellef't'ne, O.	Indpl		+63.2	- 20.6	63.0	None	.73	5.0	Pure
5001	Standard of Ohio	Art. E. Crane,	· .		+66.4	-22.0	66.4	None		4.0	Pure
5168	Maple Forest	Garrettsv'le, O. Maple Forest Syrup Co., Maple Grve, Vt.	Indpl	}							
5176	White Label	Travis & Co.,	Colun		+63.6 +59.8	-18.9 -19.8	62. 0	None None		3.2	Pure
5244	Goddard's Pure	Middlefield, O. Jos. Goddard, Muncie, Ind.	Colun		+29.8	-13.8	32.8	None		1.6	Pure Low
6607		Muncie, ind.	Noble		+61.8	-22.0	63.4	None	_	1.8	Grade Pure
6610	Goddard's Pure	Jos. Goddard. Muncie, Ind.	Mune	ie	+62.0	-22.0	63.6	None	.58	2.8	Pure
Laboratory Number.	Brand.	Manufacturer.	Asb.	Alkalinity of Ash n	Direct Polar- ization.	Invert Polar-	Sucrose.		Re	marks	•
3450 3438	Ko-We-Ba	Kothe, Wells & Bauer, Indpl	s550	8.62	+56.	6 —20.	9 58.	7 A p	ure	maple	syrup
	Maple Forest	Maple Forest Syrup Co. Maple Grove, V	t50	8.80	+39.	8 -17.	8 43.	ВАр	ure	maple	sy rup
4044 4042	Vermont's Finest Quality Standard of	Welch Bros. Ma ple Co., Burlington, V	t60	9.20	+54.	0 -22.	4 57.	Ap	ure	maple	syrup
	Ohio	Arthur K. Cran Garrettsville, (e,)55	8.80	+52	6 -21.	9 55.	7 A p	ure	maple	syrup

¹⁸⁻Bd. of Health.

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MAPLE SYRUP-LEGAL-Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Ash.	Alkalinity of Ash n H Cl. To	Direct Polar- ization.	Invert Polar- ization.	Sucrose.
4062 4063 4067 4104 4120 4121 4124 4128 4129 4137 4157 4158 4187 4194 4195		Made by Farmer. Made by Farmer. Made by Farmer. From Country. M. Owen & Son, Parkman, Ohio	Indianapolis. Indianapolis.	.72 .32 .71 .52 .64 .55 .51 .74 .74 .55 .62 .73	8.4 11.2 9.6 12.0 9.6 8.4 7.2 10.8 9.6 8.0 6.8	+56.0 +62.2 +54.0 +54.4 +58.6 +67.8 +55.0 +60.2 +60.0 +62.2	-20.5 -23.4 -19.3 -20.4 -20.2 -21.3 -21.7 -21.3	57.5 62.9 55.1 58.9 70.2 56.8 61.2 64.6 61.5 63.1
4204		Fremont, Ind. J. Todd, Bedford, Ind		.60	10.4 10.8	+50.6	-19.8	53.0

MAPLE SYRUP-ILLEGAL.

Laboratory Number	Brand.	Manufacturer.	Ash.	Alkalinity of Ash n H Cl. re	Direct Po-	larization.	Invert Po-	larization.	Sucrose.	Remarks.
293	New York State, Maple	Arthur Jordan & Co., Indianapolis.	0.114	2.32	+	59.6	_	22.0	61.0	Largely cane su-
1417	Belle Isle	E. A. Carbonneau & Co	.050	.99	+	61.1	_	18.7	61.0	gar syrup. Largely cane su-
130 146	Maple Forest.	Maple Forest Sap Co., Maple Grove, Vt	.146	3.52	+	59.1	_	21.0	60.6	Largely cane sugar syrup.
140	Vermont	Champion Syr. and Refining Co., Indianapolis	į.	1.56	+	62.6	-	21.4	63.6	Largely cane sugar syrup.
1459	G. & R	Grossville & Ra. Co., Chicago	.036	.99	+	59.3	_	21.2	60.9	Largely cane sugar syrup.
175	Oxford County	Schnull & Co., Indianapolis	1	.000	+	41.2	_	19.8	46.2	Largely cane sugar syrup.
3310	Champion	Champion Syr. and Refining Co., Indianapolis	1	3.05	+	55.4	_	22.2	58.7	Largely cane sugar syrup.
246	Pure Sap	W.D. Huffman Co., Indianapolis		2,32	+	64.3	-	4.0	51.7	Glucose, 7.2%.
247	Gold Leaf	Huntington Maple Syr. and Sugar Co. Huntington, Vt.		3.92	+	0.0	_	20.7	15.6	sugar. Peculiar syrup.
353	Absolutely									Largely cane sugar syrup.
	Pure	Austin-Nichols Co. New York		2.32	+	20.7	-	13.8	26.1	Very dilute cane sugar syrup.
34 18		Wm. R. Manierre.	.130	3.92	+	56.0	-	20.6	58.1	Largely cane sugar syrup.

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MAPLE SYRUP-ILLEGAL-Continued.

Laboratory	Brand.	Manufacturer.	Ash.	Alkalinity of Ash n H Cl.	Direct Po-	larization.	Invert Po-		Sucrose.	Remarks.
418	Seal	Schnull & Co., Indianapolis	.225	5.88	+	62 .0	_	20.6	62.6	Contains cane
3649	Ohio	Western Reserve Syr. Co., Cleveland, O.	.324	4.00	+	34.1	_	21.3	40.9	A dilute syrup,
1241	Champion	Ragon Bros, Evansville	.080	3.05	+	31.8	_	21.2	40.1	containing cane sugar. A dilute cane su-
1259	Maple Grove.	Standard Syr. Co., Cleveland	.050	1.96	+	55.2	_	21.7	58.2	gar syrup. Largely cane su-
3701	Delmonico	W. D. Huffman & Co., Indianapolis	.300	5.48	+	80.9	+	40.3	3 0.6	gar syrup. Glucose, 28.75%.
1501	Charm	Franklin Mac- Veagh & Co., Chi- cago	.065	2.74	+	64.8	-	20.9	64.9	Largely cane sugar syrup.
1621	Vermont	Ottenheimer & Son, Louisville	.052	1.96	+	61.5	-	20.2	61.8	Largely cane su- gar syrup.
4033	Pure Quebec.	Williams Bros. & Carbonneau, Detroit	.135	2.32	+	33. 3	_	20.9	41.0	Dilute canesu- gar mixture.
1637	Our Best	Goodwin Preserve Co., Louisville	.138	3.05	+.	40.5	-	21.3	46.8	Dilute cane su- gar mixture.
1062	Kinzee	Stevenson & Gross, Chicago	.02 0	1.56	+	47.5	-	20.2	51.2	Largely cane su- gar syrup,
3183	Royal Blue	W. J. Quan & Co., Chicago	.136	2.00	+	55.6	-	20.7	57.8	Largely cane su- gar syrup.
3257	Monarch	Monarch Maple Sy- rup Co., Providence, R. I.	.090	1.20	 	64.4	_	21.6	65.1	Largely cane sugar syrup.
4034 294	Green Moun-	New England Ma- ple Syrup Co., Boston	.080	2.80	+	59.6	-	20.6	60.7	Largely cane sugar syrup.
	tain Sap	Burlington Pack- ing Co., Burling- ton, Vt	.100	2.80	+	59.8	_	21.7	61.2	Largely cane sugar.
48	Canada Sap	Scudder Syrup Co., Chicago	.136	2.80	+	39. 8	-	20.6	45.4	Largely cane su- gar.
325	Champion	Champion Syrup Ref. Co., Indianapolis	.054	2.00	+	59.4	_	21.5	60.8	Largely cane su- gar.
326	Fort Henry	W. Va. Preserve Co., Wheeling, W. Va.	.120	2.00	+	74.6	_	14.7	67.1	Glucose, 4.0%. Largely cane
1742	Canada Sap	Scudder Syrup Co., Chicago.	.118	2.40	+	47.7	_	21.1	51.7	sugar. Largely cane su-
4053	Sugar Grove.	Kenwood Preserve Co., Chicago	.200	2.80	+	131.4	+	113.8	13.2	Glucose, 67.5%. Largely glucose
3463	Maple Forest.	Maple Forest Syr. Co., Maple Groves, Vt.	.112	2.40	+	27.4		20.9	36.3	Largely dilute
3609	Log Cabin	Towle Maple Syrup Co., St. Paul, Minn., and Bur- lington, Vt	.199	4.80	+	14.4	_	21.3	56.9	syrup. Largely cane sugar syrup.

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MAPLE SYRUP-ILLEGAL-Continued.

Laboratory Number.	Brand.	Manufacturer.	Ash.	Alkalinity of Ash 13 H Cl.	Direct Po-	larization.	Invest Do.	larization.	Sucrose.	Remarks.
3617	Ohio	Western Reserve Syr. Co., Cleveland	i	4.40		42.4	_	20.4	47.2	Nota pure maple
3469	Green Moun- tain Sap	Burlington Pack.	ļ		ľ					syrup.
0070	01-0	Co., Burlington, Vt.	.164	2.80	+	64.0	-	21.7	64.4	Largely cane su- gar syrup.
	Canada Sap	Scudder Syr. Co., Chicago	.138	2.40	+	65.2	-	22. 8	66.1	Largely cane su- gar syrup,
3685	Pure Quebec.	Williams Bros. Co., Detroit, Mich.		2.80	+	55.2		21.1	57.3	Largely cane su-
3704	Green Moun- tain Syrup.	Towle Maple Syrup Co., St. Paul, Minn., and Bur- lington, Vt	.090	1.20	+	63 2	-	22. 0	64.0	gar syrup. Largely cane su-
4052		Court House Gro- cery, Indianapolis	.028	3.20	+	40.0	_	19.0	44.4	gar syrup. A cane sugar
382 8	Canadian Club	Arcadia Maple Co., Importers		2.00	+	8.0	-	16.2	18.1	A dilute syrup. Largely cane.
3786	Maple Grove.	Standard Syrup Co., Cleveland	.024		+	53.2	_	20.9	55.7	A cane sugar
3896	Maple Grove.	Standard Syrup Co., Cleveland	.012	2.00	+	50.8	_	21.7	54.5	A cane sugar
1043	Western Re- serve Ohio Maple Syr.	Western Reserve Syr. Co., Cleveland	.27	4.00	+	30.4	_	20.9	38.5	Nota pure maple syrup.
1734	Old Manse	Wm. R. Manierre	.16	3.20	+	51.2	-	20.2	53.6	Largely cane su- gar syrup.
3162	Blossom B	McNeil-Higgins Co., Chicago	.12	2.40	+	52.0	_	20.9	51.8	Largely cane sugar syrup.
1700	Maple Tree	Western Reserve Syr. Co., Cleveland	27	3.6	+	36.0	_	20.6	41.	Largely cane su-
3164	Triumph	Poinier Syr. Co., Green Bay, Vt.		3.2	+	58. 0	_	21.1	59. 4	gar syrup. Largely cane su-
3166	Laurel	Walsh, Boyle & Co., Chicago	.15	1.6	+	57.0	_	22. 0	59.3	gar syrup. Largely cane su-
3149	Probono	Durand & Kasper Chicago	.23	2.8	+	67.8	_	20.6	66.4	gar syrup. Largely cane su-
1416	Belmont	Chicago Concen- trating Co., Chicago				•				gar syrup.
		Chicago	.06	2.8	+	58.4	-	21.1	59.7	Largely cane su- gar syrup.

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MAPLE SYRUP-ILLEGAL-Continued.

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Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Ash.	Alkalinity of Ash B H	Direct Po- larisation.	Invert Po- larisation.	Sucrose.	Remarks.
64	Belmont .	Chicago Con- centrating Co., Chicago		.2	.4	+47.6	-22 0	51.1	Cane sugar syrup. Adulterated
79	Old Manse	Wm. R. Mani- erre, Chicago	Alexandria	.82	1.6	+32.2	-23.1	40.7	Cane sugar syrup. Adulterated
365	Mapline	New Orleans Coffee Co	Vincennes.	 		+99.4	+77.8	16.5	No maple present. Glucose 73.7%. Not true to label. Adulterated
4066			Indianap's.	.49	6.4	+61.6	-21.5	62.4	Small amount cane sugar. Adulterated
4123	Ohio Ma- ple Syrup.		South Bend.	.43	6.8	+65.0	-20.4	61.4	Contains cane sugar. Adulterated
4127		······	Columbus	.16	2.0	+60.6	-21.3	61.5	Caramel color. Al- most wholly cane sugar syrup. Adulters ted

MAPLE SYRUP-ILLEGAL-Continued.

Brand. Brand. Manufacturer. Collected. Collecte	T10			-	Polarization	ation.				K#-			
Chie Maple L. G. Yoo & Co. Co. Cleveland Indianapolis +58.4 -38.0 13 16 Adulterated. Chia Mapie Western Reserve Syrup Co., Indianapolis +52.4 180 45.4 38 3.2 Largely cane Old Mapie Wannerch Maple Syrup Co., Co., Indianapolis +52.2 -191 56.6 13 Largely cane Wolder Monarch Maple Syrup Co., Providence Indianapolis +52.2 -191 56.6 10 11 Largely cane Waldorf Western Reserve Syrup Co., Cleveland Indianapolis +51.6 -193 53.3 17 10 Largely cane Chanda Sap St., Paul Refining Co., St. Paul Indianapolis +41.0 -22.0 46.1 Adulterated Chanda Sap St., Paul Refining Co., St. Paul Indianapolis +41.0 -22.0 67.1 46.1 Adulterated Northern Woods Berry Marbian Northern Woods Berry Marbian Franklin +55.4 -67.2 67.1 67.2 67.2 67.2 67.2	Laborato Numbe	Brand.	Manufactorer.	Where Collected.	Direct.	Invert	.өзолопд	. Впсове.		It latoT g Tinit oH ot a	Remarl	K 8	• •
Old Manse Wm. R. Minierre Indianapolis +562 -191 556 112 Izargely cane during cane Old Manse Nonardh Manierre Monardh Indianapolis +56 -194 54 20 14 Izargely cane Monardh Monardh Monardh Indianapolis +56 -193 53 17 10 Izargely cane Ohio Western Recerce Symp Co., Cleveland Indianapolis +10 -220 47.3 27 24 Izargely cane Michigan Strandard Sapur Co., St. Paul Indianapolis +10 -220 47.3 27 24 Izargely cane Northenian Northenian Northenian Northenian 40.4 6	861	Ohio Maple	78	Indianapolis Indianapolis	+58.8	18.4	0.88 4.64		51.88		Adultera Largely		1
Wonarch Monarch Maple Syrup Co., Indianapolis 758.0 231.1 594.1 10 6.8 Largely cane on the canal of the canal	1867 1868	Champion			+ + 56.2	191	9.5 2.6 2.6		2.5	5,4	Largely	~ ~	ugar.
Western Reserve Syrup Co., C., Indianapolis 71,4 152,5 12 Largely cane of Chandas Sap 12 Largely cane of Chandas Sap 13 Largely cane of Chandas Sap 14,6 1	870	Monarch			+58.0	-21.1	59.4		2:	80	Largely can	9	P.
Canadas Sap St. Paul Refining Co., St. Paul Indianapolis #410 -22.0 #7.3 24 Largely cane Michigan Borry Maybran Long Syng Co., Boston Franklin #6.4 #6.4 #6.4 4.6 Adulterated. Northern Woods Berry Maybran Long Syng Co., Boston Franklin #6.4 #6.2 15 16 #6.7 #6.2 15 16 Hargely cane Hargely cane Hargely cane Hargely cane 16 #6.2 15 16 Hargely cane Hargely cane 16 #6.7 15 16 Hargely cane Hargely cane 16 Hargely cane	963	Ohio			+37.4	1 8 5.4.	2.05 4.05 4.05		-ેક	26.	Largely can	9 8 10 g	787.
Northern Woods Berry Marbern Northern Woods Berry Marbern Northern Woods Now England Maple Syrup Co, Boston Franklin +65.4 -213 65.2 1.6 1.6 1.4 Integrity cane Vermont Franklin +65.4 -22.0 65.7 1.5 1.6 Integrity cane Vermont Franklin +65.4 -22.0 65.7 1.5 1.6 Integrity cane Vermont Franklin +65.4 -22.0 65.0 1.0	1977	Canada Sap		Indianapolis.	+ 41.0	- 22.0	39.8 39.8	. 7	2.6	4.6	Largely can	ne e	rar.
Vermont Buntington Maple Syrup Co., Vermont Franklin +67 8 -196 65.7 15 3.6 Largely cane Waple Grove Sandard Syrup Co., Cleeland, O. Columbus +56.4 -22.0 61.0 17 16 Largely cane Vermont Price & Louisville Columbus +63.4 -22.4 64.8 17 16 Largely cane Scudder's Wm. Hort Co., Chemgo Anderson +63.4 -22.4 64.8 18 16 Largely cane Old Silas McNeil Higgins, Chicago Anderson +63.4 -22.4 64.0 16 Adulbarted Blosson McNeil Higgins, Chicago Covington +54.0 -18.3 55.8 11 12 Largely cane Westmoreland Buntand & Raper Co., Chicago Vermont Kokono +63.2 -22.2 64.9 16 11 12 Largely cane Westmoreland Buntand & Raper Co., Chicago Vermont Kokono -19.2 64.3 14 65.8 14 66.2	984	Northern Woods.	Berry Maybrun	Indianapolis.	+ + 60.2	- 20.2	S. 8.		ಶ=		Largely can	o sur	rar.
Maple of vove Sandder Syrup Co. Cloum bus +56 d - 22.0 61.0 17 16 Largely cane Scudder's Scudder Syrup Co. Muncie +61.0 -22.4 64.8 18 16 Largely cane Scudder's Scudder Syrup Co. Anderson +63.4 -22.4 64.8 18 16 Largely cane Old Silas Inavit Calente Anderson +63.4 -22.4 64.8 16 16 Largely cane Blosson McNeil Higgins, Chicago Anderson +56.4 -22.4 65.8 12 10 16 Adultarked Blue Label Scully Syrup Co. Noblesville +54.0 -19.5 55.8 11 12 Largely cane Westmoreland Hunting Angle Syrup Co. Vermont Kokomo +48.4 -19.5 56.8 10 12 Largely cane Westmoreland Hunting & Rasper Co., Chicego Vermont Kokomo +68.2 -22.2 66.9 10 0 Largely cane <t< td=""><td>222</td><td>Vermont</td><td>Huntington Maple Syrup Co, Vermont</td><td>Franklin</td><td>+67.8</td><td>19.6</td><td>8</td><td></td><td>:::</td><td>.00</td><td>Largely can</td><td></td><td>ij</td></t<>	222	Vermont	Huntington Maple Syrup Co, Vermont	Franklin	+67.8	19.6	8		:::	.00	Largely can		ij
Soudder's Standage Syrup Co. Muncie +63.8 -22.4 64.8 18 16 Largely cane 01d Silas Inavie Chiese Anderson +69.0 +22.4 64.9 10 0 16 16 Aduléarte cane 1d Silas Inavie Chiese Anderson +60.0 16.0 16	9129	Maple Grove.	Standard Syrup Co., Cleveland, O.	Franklin	+ + 56 4	20.52 1 20.52 1 - 1	6.0 6.0	:	5 2	 8.9.	Cane sugar s Largely can	yrup e sus	TBT.
Old Silas David College Control of College <td>2561</td> <td>Scudder's</td> <td>Seudder Syrup Co</td> <td>Muncie</td> <td>4 63.8</td> <td>22.4</td> <td>2:</td> <td>:</td> <td>œ.</td> <td>9.0</td> <td>Largely can</td> <td>e ga</td> <td>rar.</td>	2561	Scudder's	Seudder Syrup Co	Muncie	4 63.8	22.4	2 :	:	œ.	9.0	Largely can	e ga	rar.
Blossom McNeil Higgins, Chicago	25.5	Old Silas	Wm. Hoyt Co., Ch cago	Anderson	+ +	+12.1	5150	16.0	3,2		Largely can Adulterated		rar.
Wentmoreland Scully Syrup Co. Vermont Ekhart +884 -195 503 10 1.2 Largely cane 450d Leaf Huntington Maple Syrup Co. Vermont Ekhart +888 -222 6613 14 06 Largely cane Probono Durand & Kapper Co. Chivego Noblesville +66.2 -222 663 15 08 Largely cane Noblesville +62.2 -213 63.2 15 08 Largely cane	3318	Blossom	McNeil Higgins, Chicago	Covington	4.55.4	0.00 0.00 0.00 0.00	35. 80.	:	27.5	0.0	Largely can		gar.
	220	Westmoreland	:	Kokomo	4.85	19.5			‡≘	12.			
Noblesville., +622 - 21.8 63.2 15 0 8 Largely cane	963	Hold Leat	Huntington Maple Syrup Co., Vermont Durand & Kasper Co., Chicago	Klkhart	+ + 66.2	223 223 1	æ. æ.e.		7.5	900			rar.
	86			Noblesville	+62.2	- 21.3	63.2	<u>:</u>	.15	80	-		rar.

MAPLE SUGAR-LEGAL.

Laboratory Number.	Where Collected.	Aeh.	Alkalinity of Ash
4134	Roekford.	1.14	16.0
4139	Sanborn	.90	5.2
4140	Sanborn.	.98	9.6

MOLASSES.

Molasses is made from the juice of cane or other sugar producing plants, and is commonly understood to be the liquid material draining from granulated sugar made from sugar cane, either by natural percolation or by being treated in centrifugal machines. The commercial term, molasses, however, applies to other syrups, including that made from sorghum. The perfection of sugar making processes has increased the amount of cane sugar obtainable from a given quantity of juice and consequently diminished the molasses residue.

With the diminishing of the quantity the quality of the molasses has also depreciated until frequently it is unsuitable for table use. It has become a common custom, for that reason, to add glucose, or corn syrup, to these dark, strong residuums, and thereby produce a lighter colored and more attractive syrup, of finer body and flavor.

While this addition produces an article of increased value from a commercial standpoint, the use of glucose in improving the grade of molasses is considered by all authorities to be an adulteration, and is prohibited by our law, unless goods so blended are properly branded.

MOLASSES-LEGAL.

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Laboratory Number.	Brand.	Manufacturer.	Where Cellected.	Direct Polarisa- tion.	Invert Polarisa- tion.	Sucrose.	Remarks.
122	Fancy Open Kettle	New Orleans Coffee	W		-18.4	43.9	
288	New Orleans- Dark	Co., New Orleans.	Muncie	+40.0	19.4	\$0.9	Pure.
1188	2412	Co., New Orleans. American Grocery	Terre Haute	••••	,	·•••	Burnt - low
1246	G. R. N. O. M.	Co, Louisville Walsh, Boyle & Co.	Princeton Mt. Vernon		-9.4 -13.0	37.2 26.7	Pure. Pure.
1271 1273	Open Kettle. Leoti	Botts-Young Molas-	Mt. Vernon	+29.2	-13.6	31.1	Pure.
1304	,	ses Co., New Or- leans	Mt. Vernon	+48.4	-5.9	40.8	Pure.
1670	•	Chicago. New Orleans Coffee	Evansville.	+34.8	-16.7	38.7	Pure.
3706		Co., New Orleans.	Salem Irvington	+47.2 +41.0	-18.7 -11.2	49.5 39.2	Pure. Pure.
3283	Plantation Compound	Champion Syrup Refining Co.,					
		Indianapolis	West Indi- anapolis	+66.4	+17.1	37.0	Formula 75% N. O.; 25% glucose; la- beled cor-
							rectly.

MOLASSES-ILLEGAL.

55	Quaker N.O.	Crescent Preserve Co., Indianapolis		+114.4	+40.4	55.6	Glucore 33.6% Adulterated
342	Fountain	Fromhold Bros., Indianapolis.	Vincennes	+51.6	+14.5	27.9	Glucose 13.5% Adulterated.
390 1651	O. K Last Year,	Lafourche Planta- tion	Vincennes	+79.8	+55.4	18.3	Glucose 65%.
	1904		New Albany	+78.6	+47.0	23.7	Glucose present. Adulterated.
1657		Scheffel & Wheat, Louisville	New Albany	+110.6	+89.5	15.9	Glucose 61%. Adulterated.
1694		New Orleans Mo-					
1769		New Orleans New Orleans Coffee	Salem	+119.4	+99.6	13.3	Glucose 47%.
1100		Co., New Orleans	Indian'pls	+46.4	-16.0	46.9	Sulphurous acid present.
3460			Columbus.	+99.4	+73.7	19.3	Adulterated Glucose 45.7% Adulterated
3677	Dove	M. H. Alexander & Co., New Orleans	Irvington	+73.4	+43.5	22.4	Glucose 36.3% Not true to formula.
3775	Golden Eagle	Delta Packing Co., New Orleans	Indian'pla	+88.6	+45.1	30.4	Glucose 33 2% Adulterated
3401	Quaker	Crescent Preserve Co., Indianapolis	Columbus	+137.8	+128.0	7.3	Glucose 74.5% Adulterated.

SORGHUM MOLASSES.

Sorghum molasses is made by evaporating sorghum juice to the required consistency. Most of the product on the market is made in a small way by concentrating in open pans. None of the sugar is removed because of the difficulty with which it can be freed from the starches and uncrystallizable sugar. Sorghum syrup, because of the presence of large quantities of saccharine matter, is very liable to ferment, and the use of preservatives to check fermentation is not uncommon. We have recently had occasion to examine a sample of sorghum syrup which was preserved with boric acid and beta naphthol, and also contained whiting as a filler. Much glucose is used with sorghum syrup. Some samples examined contained as high as 80 per cent. Six of the 16 samples examined were adulterated.

SORGHUM MOLASSES-LEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Direct Polariza- tion.	Invert Polariza- tion.	Sucrofe.	Remarks.
1138		C. W. Adams & Co, Louisville	Oakland City	+41.4	5.7	35.4	Pure.
1209	Country	Jos. Colegate, Velpen, Ind.		+26.6	-12.1	29.1	Pure.
1214 1240	Cane Juice	Jos. Colegate. Stendal, Ind. Walsh, Boyle & Co.,	Princeton	+27.0	-12.3	22.0	Pure.
1248		Chicago		+23.2 +26.6	-13.2 - 6.1	27.3 24.5	Pure. Pure.
1296	T- 3!	G. F. Smock, Curdsville, Ky.		+19.4	9.4 - 18.0	21.6 40.3	Pure.
1376 1484 1572	Indiana.	From Farmer Boniface, Weber &		+35,6 +43.4	- 18.0 12.9	42.3	Pure.
		Allen, Jefferson- ville	Jefferson- ville	+41.0	- 7.4	36.4	Pure.
8712	Compound	Crescent Preserve Co., Indianapolis			+60.7	35.1	Glucose, 46.9. True to formula.

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SORGHUM MOLASSES—ILLEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Direct Polariza- tion.	Invert Polariza- tion.	Sucrose.	Remarks.
1197		Bement & Seitz, Evansville	Princeton	+76 4	+44.4	24.0	Glucose, 68%. Adulterated.
1207	Fenesse	National Molastes Co., St. Louis	Princeton	+ 142.0	+ 135.0	0.52	Glucose, 80%. A glucose syrup.
1232	95% Pure, Diamond Island	Bement & Seitz. Evansville	Mt.Vernon.	+73.2	+55.8	13.0	Glucose, 73%.
1333		Bement & Seitz, Evansville	Evansville .	+79.6	+56.5	25.0	Adulterated. Glucose. 60%. Adulterated.
3695	Our Pride	Davenport Refin- ing Co., Daven- port, Ia	Irvington	+ 121.2	+115.8	11.5	Glucose, 62.7. Not true to
341	Fountain	Fromhold Bros., Indianapolis	Vincennes.	+ 128.2	+ 125.4	2.1	formula. Glucore, 72%. Adulterated.

TABLE SYRUP-LEGAL.

.1.				Polari	Polarization.				C] re cc gs-	
orano asa. Samu M	Brand.	Manufacturer.	Where Collected.	Direct.	Invert.	.93012пВ	Glucose.	.daA	IA lasoT a viiail H ol a	Remarks.
969 364 364 1137 1143	969 Gold Leaf Western Western Reserve Western Reserve Mess Vermont Vermont Mess Golden Tree Mess Mess Mess Mess Mess Mess Mess M	Huntington Map. Syr. Co., Providence, R. I. Knightstown. + 65.6 covington. + 37.0 nt. Maple Syr. & Sug. Co., Providence, R. I. Ft. Wayne + 65.0 s. Tree. New Eng. Maple Syr. Co., Boston. Ft. Wayne + 62.0 s. Every Expressible Schmill & Co., Indianapolis. Brazil + 141.6 human & Co., Terre Haute. Brazil + 53.6 y. C. Perry & Co., Indianapolis.	Knightetown. Covington. Covington. Ft. Wayne Ft. Wayne Brasil. Irvington	++++++ 88.89.1.82 60.036.82	16.7 11.1 11.0 17.0 17.0 17.0	61.1 60.5 60.5 7.2 49.4 36.0	61.1 40.7 60.5 68.1 7.2 7.2 7.8 89.4	08.11.88	76.8 08.11.28 08.11.28 1.6.08	Not sold for maple. Not sold for maple. Not properly labeled. Glucose, 76.8. Pure. Pure.
		TABLE SYRU	TABLE SYRUP-ILLEGAL.							
895	Imperial.	A. H. Perfect Co., Ft. Wayne F. P. Wilt Co., Et. Wayne	Ft. Wayne Ft. Wayne	+ 158.4 + 153.5 + 70.4 - 11.4	+153.5	3,7	88.4			Sulphurous acid ,346. Sulphurous acid ,011.

MEAT PRODUCTS, STEAKS, SAUSAGES, PRESSED MEATS, ETC.

Considerable work has been done in investigating the quality of the fresh prepared meats sold on our markets. Samples sent in by our inspectors from different cities show a decided difference in composition so far as the use of preservatives is concerned. The dealers of certain cities evidently have relied entirely upon borax, and in other places they have used sulfites as preservatives. Collections of meat from the Indianapolis city markets showed an almost universal use of sodium sulfite in chopped meat.

Of twenty-one samples of Hamburger steak, which is prepared by mincing scraps of beef, eighteen contained sulfites, which, calculated as sodium sulfite, the salt usually used, ranged in amount from .015 per cent. to .501 per cent.

The sulfites are used for two reasons; they are preservatives and they act as colorants by preserving the color of the blood corpuscles by forming oxyhaemaglobin, which is of a bright red color. They are the most dangerous of all the preservatives used in food products, not only because of their physiological action on the individual, but because they possess the property of masking the odor and appearance of decay so that putrefaction, usually intelligible to the senses, is not noticed until the meat is in an advanced stage of decomposition. Sulfurous acid, or sulfites, produce a marked toxic effect on the individual, even in doses as small as are employed in preparing meats, and even when their inhibition is not attended by apparent ill effect, it is probable that they may produce kidney lesions of a serious character. Their use is absolutely prohibited by the German government and by the new national food laws of this country.

The claim by the users of these preservatives that it is impossible to do without them and that their abandonment would injure business is a specious argument, and endangers the public health. The use of proper precaution in handling meats, coupled with a realization that meat so aged that its odor and evidences of decay must be masked to appear presentable is not fit food for human consumption, will make it possible for the public to obtain wholesome provisions.

It is probable that many dealers who resort to the use of preservatives do so under the impression that they are not injurious to health. This belief is fostered by the fact that they see no ill effects following their use in their customers (a fact, however, which a physiologist and post mortem can alone determine), and the extravagant claims for healthfulness advanced by the manufacturers of these vicious products.

As the result of the revelations at the city market legal proceedings were instituted against 30 of the dealers selling goods containing sodium sulfite, and by agreement of counsel for the county and the defendant, one case only was tried. The results of this trial, which extended over a week and which was bitterly fought by the defendant with the assistance of Chicago lawyers and the president of the company manufacturing the preservative used, was that the jury disagreed. The outcome of the case, however, was that of a victory for the State, since by the advice of their counsel the dealers in meats throughout the city abandoned at once the use of sulfites or other illegal meat preservatives. Later examinations of meats sold throughout the city show invariably the absence of sulfites. For a time much complaint was heard that meats could not be kept without them, but as the dealers became accustomed to the handling of their meats they found that they had no difficulty in keeping them fresh and attractive even when no chemical preservatives were employed.

Preservatives, whether they be called Preservaline, Antisour, or by any other name, are illegal. The only preservative agents permissible in the curing of meats are salt, saltpeter, wood smoke, vinegar, sugar and spices.

SAUSAGES-LEGAL.

Laboratory Number.	Manufacturer.	Where Collected.	Preserva- tives.	
4462 4465 4498 4503 4446 4492 4494 4559 4561	Kingan & Co William Grund Sindlinger & Co Meier & Meuser D. T. Buser Louis Schwab People's Provision Co E. F. Overman Paul Brandlein	Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis	Absent. Absent. Absent. Absent. Absent. Absent. Absent.	
4562 4565- 4566 4569 4571 4573	R. Fleckhummer Joe Schott Klliott Dressed Beef Co Joe Cook Charles Mock A. Stuckmeyer.	Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis	Absent. Absent. Absent. Absent. Absent. Absent.	

SAUSAGR-LEGAL-Continued.

Laboratory Number.	Manufacturer.	Where Collected.	Preserva- tives.
4575 4580 4680 4646 4646 4672 4673 4674 4783 4784 4784 4785 4789 4784 4785 4785 4786 6052 6052 6107 6134 6319	Kingan Rolla Hipple Frank Strodie Liekarf Packing Co Rekart Packing Co Cherry Street Market A. Haller Grice Meat Market Eckart Packing Co S. Davis Louis Schwab L. J. Unversaw Kukner & ons Topp & Moore O. M. Stewart L. J. Unversaw L. J. Unversaw L. J. Unversaw L. J. Unversaw L. J. Unversaw L. J. Unversaw L. J. Unversaw L. J. Unversaw Common Com	Indianapolis Noblesville Indianapolis Ft. Wayne Ft. Wayne Ft. Wayne Ft. Wayne Ft. Wayne Ft. Wayne Ft. Wayne Indianapolis Crawfordsville South Bend South Bend	Absent. Absent.

SAUSAGE-ILLEGAL.

Laboratory Number.	Brand.	Munufacturer.	Where Collected.	Borax.
124 149 171 182 230 239 251 254 259 263 333 334 407 426 457 457 457 457 457 457 457 457 457 457	Frankfurt. Knoblock Wienies Wienies Pork Wienies Wienies Wienies Wienies Conies Polish Garlie Garlie Wienies Wienies Conies Frankfurts Frankfurts Frankfurts Pork Pork Pork Wienies Wienies Wienies Wienies Wienies Wienies Frankfurts	Swift & Co., Chicago Evansville Packing Co., Evansville Evansville Pork Co., Evansville. Indianapolis Abattoir Co., Indianapolis Schwarzchild & Sulzberger, Kans. City Swift & Co., Chicago	Indianapolis	Present. Present.
1512	Pork	Wm. Rauscher, Huntingburg	Huntingburg.	Present.

SAUSAGE-ILLEGAL-Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Borax.
	177	W D T T T T T	TT	D
1514	Wienies	Wm. Rauscher, Huntingburg	Huntingburg .	Present
1552	Wienies	Louis P. Bornwasser, Louisville	Jeffersonville.	Present.
1553	Pork	Louis P. Bornwasser, Louisville	Jeffersonville.	Present.
1554	Garlie	Louis P. Bornwasser, Louisville	Jefferson ville.	Present
1800	· <u></u>	Kingan & Co., Indianapolis	Irvington	Present
3176	Wienies	Fred Kurtzman, Hammond	Hammond	Present
3177	Garlio	Fred Kurtzman, Hammond	Hammond	Present
3180	Pork	Fred Kurtzman, Hammond	Hammond	Present
3187	Pork	Hammond Packing Co., Hammond	Hammond	Present
3188	Wienies	Armour & Co., Chicago	Hammond	Present
3189	Polish	Armour & Co., Chicago	Hammond	Present.
3190	Tongue	Armour & Co., Chicago	Hammond	Present
3266	Pork	Albert Worm, Indianapolis	Indianapolis	Present.
3266	Pork	Albert Worm, Indianapolis	Indianapolis	Present
3816		Gibson Meat Market	Indianapolis	Present
3819	Shamrock	Kingan & Co., Indianapolis	lrvington	Present
3820	Wienies	Kingan & Co., Indianapolis	Irvington	Present
3938	Wienies	Bonwayton, Louisville	Jeffersonville.	Present
3939	Wienies	Bonwayton, Louisville	Jefferson ville.	Present
154	Bologna	Hammond & Co., Chicago	Brazil	Present
172	Bologna	Jones & Co., Brazil	Brazil	Present
250	Bologna	Fred Herman, Terre Haute.	Terre Haute	Present
257	Bologna	F. A. Brown, Terre Haute	Terre Haute	Present
262	Bologna	Geo. Schidel. Terre Haute	Terre Haute	Present
267	Bologna	C. W. Kern, Terre Haute	Terre Haute	Present
330		Clum Nagle, Terre Haute	Terre Haute .	Present
356	Bologna	The D Zaber Wie caute	Vincennes	Present
427	Ham	John B. Zuber, Vincennes		Present
	Bologna	C. J. Stumpp, Washington	Washington	
458	Bologna	C. J. Bernes, Washington	Washington	Present
1154	Bologna	Armour & Co., Chicago,	Oakland City.	Present
1334	Bologna	Evansville Packing Co., Evansville	Evansville	Present
1513	Bologna	Wm. Rauscher. Huntingburg	Huntingburg	Present
3268	Ham	Schwarzchild & Sulzberger, New York.	Indianapolis	Present
189	Liverwort	Duffer, Terre Haute	Terre Haute	Present
249	Liverwort	Fred Herman, Terre Haute	Terre Haute	Present
255	Liverwort	Armour & Co., Chicago	Terre Haute	Present

SAUSAGE ILLEGAL.

Laboratory Number.	Manufacturer.	Where Collected.	Borax.	Sodium Sulfite.
4466 4469 4471 4473 4474 4481 4489 4490 4504 4504 4542 4544 4552 4556 4644 4648	Sam Davis J. Deschler Hilgemeier & Bro Steinmetz Bros Steinmetz Bros Harry Matzke H. W. Heckman Geo. Woessner Chas. Wechsler Meier & Meuser Pk. Co Meier & Meuser Pk. Co L. Nageleisen Henry Coleman Chas. Cherdron Sindlinger & Co H. G. Wigemann Eckart Packing Co	Indianapolis Fort Wayne	Present.	.121 per cent. present106 per cent. present295 per cent. present090 per cent. present160 per cent. present288 per cent. present188 per cent. present093 per cent. present045 per cent. present240 per cent. present240 per cent. present275 per cent. present275 per cent. present312 per cent. present312 per cent. present345 per cent. present.

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SAUSAGE-ILLEGAL-Continued.

Laboratory Number.	Manufacturer.	Where Collected.	Borax.	Sodium Sulfite.	
4656 4657 4658 4659 4660 4670 4776 4798 4808 4820 4846 4582 5921	Jonn Melber J. P. Cabill M. Bain L. Taberski J. Lake Hallers Eckart Packing Co Fred Jans Albert Worms Albert Worms Albert Worms Eckart Packing Co	Indianapolis Indianapolis Indianapolis Noblesville	Present Present Present Present Present Present Present 210 per cent. present .2976 per cent. present .1017 per cent. present.	Absent. Absent. Absent. Absent. Absent. Absent. Absent. Absent.	

HAMBURGER STEAK-LEGAL.

Laboratory Number.	Manufacturer.	Where Collected.	Borax.	Sodium Sulfite.
4479 4481 4486 4568 4563 4564 4567 4577 4578 4642 4577 4578 4643 4728 4733 4734 4744 4753 4760 4819	Paul Brandlein W. Simon Elliott Dressed Beef Co E. F. Overman Paul Brandlein F. A. Winterdorfer Joe Schott Fred Wuster Joe Cook W. Simon Chas. Mock F. Filz F. E. Vickard Meier-Meuser Packing Co J. P. Mollett J. N. Linn S. Hanna General Store F. Filz A. Stuckmeyer Simon (City Market) Wm. Grund Elliott Dressed Beef Co S. Davis Meier-Meuser Packing Co Sindlinger Fresh Meat Co H. H. Merkin A. Cherdron Theo. Deitz Albert Worm	Indianapolis. Indianapolis.	Absent Absent	Absent. Absent.

HAMBURGER STEAK-ILLEGAL.

	Manufacturer.	Where Collected.	Borax.	Sodium Sulfite.
T	A Stuckmeyer	Indianapolis	Absent.	.178 per cent. present.
13	F. Filz	Indianapolis.	Absent	.147 per cent. present.
1	F. W. Hebble	Indianapolis	Absent	.164 per cent. present.
	Wm. Grund	Indianapolis	Absent	.429 per cent. present.
L	Sam Davis	Indianapolis	Absent.	.226 per cent. present.
Н	Steinmetz Bros	Indianapolis	Absent.	.482 per cent. present.
	Harry Matzke	Indianapolis	Absent.	.260 per cent. present.
Ľ	Theo. Dietz	Indianapolis	Absent	.101 per cent present.
и	Chas. Mock	Indianapolis	Absent.	.131 per cent. present.
1.	Joe Cook	Indianapolis	Absent.	.298 per cent. present.
Г	W. H. Heckman	Indianapolis	Absent	.501 per cent. present.
١.	Fred Wuster	Indiana polis	Absent	.026 per cent. present.
	Geo. Woessner	Indianapolis	Absent.	.170 per cent. present.
	Thos. Castor	Indianapolis	Absent.	.144 per cent. present.
	A. L. Heckman	Indianapolis	Absent	.014 per cent. present.
!	E. F. Overman	Indianapolis	Absent.	.030 per cent. present.
ı	Henry Coleman	Indianapolis	Absent	.319 per cent. present.
	J. G. Schisla	Indianapolis	Present.	.015 per cent. present.
1	L. Negeleison	Indianapolis	Absent.	.141 per cent. present. .054 per cent. present.
١.	Jos. Parent	Indianapolis	Absent	.083 per cent. present.
	Steinmetz Bros	Indianapolis	Absent	.068 per cent. present.
	Joe Fischer	Indianapolis	Absent	.039 per cent. present.
	Chas. Cherdron	Indianapolis	Absent	201 per cent. present.
1	Wm. Grund	Indianapolis	Absent	.430 per cent. present.
L	Sindlinger Fr. Mt. Co	Indianapolis	Absent.	.402 per cent. present.
П	H. Reinewald	Ft. Wayne	Absent.	.260 per cent. present.
١.	E. H. Quillen	South Bend	Present	.360 per cent. present.
1	C. D. Hinzey	South Bend	Present	.220 per cent. present.
١,	James Lake	South Bend	Present	.140 per cent. present.
Ŀ	John Wesolowski	South Bend	Present	.220 per cent. present.
1.	Wolf Brazy	South Bend	Present	.110 per cent. present.
1	Hoffer Bros	Muncie	Absent	.138 per cent. present.
1 :	Peter Hirschanner	Muncie	Absent.	.036 per cent. present.
1 :	P. W. Goble	Muncie	Absent	.074 per cent. present.
	J. Benzenbower	Muncie	Absent	.211 per cent. present.
	Albert Worm (Weinies) Eckart Pk.Co. (Frankfurters)	Indianapolis	Present	Absent.
	Geo. Keller (Frankfurters)	Ft. Wayne Crawfordsville	Absent	.1596 per cent. present
Ι'	deo. Retter (Franklufter)	Orawiorasymie	. osent	TOO DAL CORE PLASSER

4836 4839 4841	Jopp & Moore	Muncie Muncie Muncie	Absent Absent Absent	Absent. Absent. Absent.	
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MISCELLANEOUS MEATS-LEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Preservatives.
4731 4759 4756 4730 4752 4746 4743 4748 5920	Liverwurst Metwurst Metwurst Liver Pudding	Indianapolis Abattoir F. Hilgemier Kingan & Co Kingan & Co	Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis	Absent. Absent. Absent. Absent. Absent. Absent. Absent. Absent.

MISCRLLANEOUS MEATS-ILLEGAL.

atory	2000		v	Vhere			
Laboratory Number.	Brand.	Manufacturer.	Co	llected.	Borax.	80	odium Sulfite.
4834 4835 4837 4838 4840 4347 4808 4817 4603 5922 5014 5049	Fresh Meat Fresh Meat Fresh Meat Fresh Meat Fresh Meat Minced Ham Boiled Ham Boiled Ham Bologna Pressed Ham Frankfurter	Bill Thomas J. S. McDonald Bensenlower O. M. Stewart Dan Gorman J. Frederick Albert Worm Ind'polis Abattoir Eckart Packing Co Geo. Keller Shaw & Thompson	Muncie Absent .038 Muncie Absent .785 Muncie Absent .785 Muncie Absent Absent Indianapolis .13024 Noblesville Excess Absert Abse		.038 j .095 j .885 j	ont. ont. ont. ont.	
		FRANKF	JRTER	S-LEGA	<u>L.</u>		-
Laboratory Number.	Manufacturer.			Where Collected.			Preservatives.
4736 4740 4751 4771 5015 5046	H. Merklin Eckart Packin Armour & Co	Packing Co	••• •••	Indianap Indianap Indianap Crawford	olis olis olis olis sville		Absent. Absent. Absent. Absent. Absent. Absent.
		нам 1	LOAF-	LEGAL.			·
Laboratory Number.	Manufacturer.			Where	o Collected	l.	Preservatives.
4671 4737 4773 4774 4774 4784 4810 48 9 4814 4816 4818	Nelson Morris Eckart Packin Eckart Packin Kingan & Co. Kingan & Co. Kingan & Co. Coffin-Fletcher Swift & Co., Cl	g Co		Indianap Ft. Wayn Ft. Wayn Indianap Indianap Indianap Indianap	e		Absent. Absent. Absent. Absent. Absent. Absent. Absent. Absent. Absent. Absent. Absent. Absent.

VEAL-LEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Preservatives.
4842 4576 4727 4757 4813	Veal Ham	Meier-Meuser Co	Indianapolis	Absent. Absent. Absent. Absent. Absent.

BOLOGNA-LEGAL.

Number.	Manufacturer.	Where Collected.	Preservatives
26 38 45 49 58 72 86 88 90 92 97 99 60 100 51 50 51	F. Filz Meier-Meuser Packing Co. Sindlinger Fresh Meat Co. F. Uhl P. Brandlein Eckart Packing Co. Meier-Meuser Packing Co. Meier-Meuser Packing Co. Ooffin-Fletcher Co. Geo. Derleth. Meier-Meuser Co. A. Janert. Bills & Boettecher. Coffin-Fletcher Co. Kingan & Co. Kingan & Co. Coffin-Fletcher Co. Indianapolis Abattoi Shaw & Thompson. Swift & Co. Chicago.	Pt. Wayne Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis	Absent. Absent. Absent. Absent. Absent. Absent. Absent. Absent.

WEINER SAUSAGE-LEGAL.

Sindlinger Fresh Meat Co	Indianapolis Absent.
Geo. Derleth	Indianapolis Absent.
Meier-Meuser Packing Co	indianapolis Absent.
Sam T. Brown	Indianapolis Absent.
Albert Janert	Indianapolis Absent.
Wm. Toll	Indianapolis Absent.
Kingan & Co	Indianapolis Absent.
Kingan & Co.	Indianapolis Absent.
Indianapolis Abattoir	Indianapolis Absent.

MISCELLANEOUS MEATS-LEGAL.

Laberatory Number.	Article.	Manufacturer.	Borax.	Sodium Sulfite.
4459 4468 4461 4497 4464 4478	Dried Beef Dried Beef Ham Loat Ham Loaf Pigs Foot Jelly Fresh Tripe		Absent. Absent. Absent. Absent. Absent. Absent.	Absent. Absent.

MISCELLANEOUS MEATS-ILLEGAL.

4488	Veal Loaf	F. Filz. Albert Worm. Sindlinger ('o. Harry Matske. Joe Cook. Meier-Meuser Packing Co.	Absent.	.279 per cent. present.
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MISCELLANEOUS MEATS-ILLEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Borax.	Sodium Sulfite.
4834 4835 4837 4838 4810 4347 4808 4817 4603 5922 5014 5019	Fresh Meat. Fresh Meat. Fresh Meat. Fresh Meat. Minced Ham. Pressed Ham. Bolled Ham. Bolled Ham. Frankfurter. Frankfurter.	J. S. McDonald Benzenlower O. M. Stewart Dan Gorman J. Frederick Albert Worm Ind'polis Abattoir Eckart Packing Co- Geo, Keller	Muncie	Absent. Absent. Absent. Absent. Present. 13024 Present. Excess. Present. Present.	Absent. Absent. Absent. Absent. Absent.

FRANKFURTERS-LEGAL.

Laboratory Number.	Manufacturer.	Where Collected.	Preservatives.
4736 4740 4751 4771 5045 5046	Meier-Meuser Packing Co. Meier-Meuser Packing Co. H. Merklin Eckart Packing Co. Armour & Co., Chicago. Swift & Co., Chicago.	Indianapolis Indianapolis Indianapolis	Absent. Absent. Absent.

HAM LOAF-LEGAL.

Laboratory Number.	Manufacturer.	Where Collected.	Preservatives.
4671 4737 4773 4774 4784 4810 48 9 4814 4816 4818	Eckart Packing Co Nelson Morris Co Eckart Packing Co Eckart Packing Co Kingan & Co Zingan & Co Zingan & Co Singan & Co Kingan & Co	Indianapolis Ft. Wayne Ft. Wayne Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis	Absent. Absent. Absent. Absent. Absent. Absent. Absent. Absent. Absent.

VEAL-LEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Preservatives.
4842 4576 4727 4757 4813	Veal Ham	Harry Matzke	Indianapolis Indianapolis	Absent. Absent.

BOLOGNA-LEGAL.

Laboratory Number.	Manufacturer.	Where Collected.	Preservatives.
1728 1738 1745 1745 1749 1758 1778 1786 1786 1792 1797 1799 1802 1803 1805 1815 1822 1805 1815	R. Filz Meier-Meuser Packing Co. Sindlinger Fresh Meat Co. F. Uhl P. Brandlein Eckart Packing Co. Meier-Meuser Packing Co. Meier-Meuser Packing Co. Coffin-Fletcher Co. Geo. Derleth Meier-Meuser Co. A. Janert Bills & Boettecher. Coffin-Fletcher Co. Kingan & Co. Kingan & Co. Coffin-Fletcher Co. Lidianapolis Abattor Shaw & Thompson Switt & Co., Chicago.	Rt. Wayne Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Confordsvillo Crawfordsvillo	Absent. Absent. Absent. Absent. Absent. Absent. Absent. Absent. Absent. Absent. Absent. Absent. Absent. Absent.

WEINER SAUSAGE-LEGAL.

4755 4787 4796 4794 4800 4807 4811	Sindlinger Fresh Meat Co Geo. Derleth. Meier-Meuser Packing Co Sam T. Brown Albert Janert. Wm. Toll. Kingan & Co. Kingan & Co. Indianapolis Abattoir	Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis	Absent Absent Absent Absent Absent Absent	•
4811	Kingan & Co	Indianapolis	Abse	nt.

MISCELLANEOUS MEATS-LEGAL.

Laboratory Number.	Article.	Manufacturer.	Borax.	Sodium Sulfite.
4159 4168 4461 4197 4464 4178	Dried Beef Dried Beef Ham Loaf Ham Loaf Pigs Foot Jelly. Fresh Tripe	N. E. Specialty Co., Cleveland, O. Nelson Morris & Co., Chicag	Absent. Absent. Absent. Absent. Absent. Absent.	Absent. Absent. Absent.

MISCELLANEOUS MEATS-ILLEGAL.

4157 4460 4470 4176 4488 4496	Bologna Weinerwurst Weinerwurst Veal Loaf Veal Loaf Frankfurter	F. Filz	Absent. Present. Absent. Absent. Absent. Absent.	.147 per cent. present. Absent. .025 per cent. present. .153 per cent. present. .279 per cent. present. .050 per cent. present.
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MEAT PRODUCTS, CANNED.

Under this heading we have analyzed 20 samples of miscellaneous articles, nine of which have been pure and 11 adulterated.

MISCELLANEOUS MEAT PRODUCTS-LEGAL.

Laboratory Number.	Brand.	Manufacturer or Retailer,	Where Collected.	Remarks.
1624	Fresh Lobster,	T Dit . B. LO.	N 411	
3567	"Crown"	L. Pickert Fish Co Libby, McNeil & Libby,	New Albany.	
3570	Salmon, "Sea Rose".	Chicago. Thlinket Packing Co.	Indianapolis.	
	Daimon, Dea Rose .	Portland, Ore	Indianapolis.	
3576 3578	Hamburger Steak Boned Chicken,	Libby's, Chicago	Indianapolis.	
	"Columbia"	Mullen-Blackledge Co	Indianapolis.	
3632	Potted Chicken, "Jeddo''	Court House Grocery Co.	Indianapolis.	
3645	Deviled Tongue, "Lion".			
1529	"Lion"	Fairbank Canning Co Thos. R. Levy Co.,	Indianapolis.	
		Cincinnati.	Jeffersonville	
1713	Gold Label Shrimp	Edw. T. Russell & Co., Boston.	Kokomo	

MISCELLANEOUS MEAT PRODUCTS-ILLEGAL.

1691	Vienna Sausage,			
	"Red Star"	Cicero Canning Co.,		
		Chicago.	Salem	Preserved with Borax.
3566	Deviled Ham		Indianapolis.	Preserved with Borax.
3577	Potted Turkey.			
	Potted Turkey, "Columbia"	Mullen-Blackledge Co.	Indianapolis.	Preserved with Borax.
3579	Dried Beef.			
55,5	"Wedding Ring".	Bloomington, Ills	Indiananolis	Preserved with Borax.
3583	Chicken Tamale	Libby, McNeil & Libby	zadionepoito.	110001104 20144.
0000	Chicago Tamaio		Indiananolia	Preserved with Borax.
3771	Codfish, Shredded	J. N. Bearsly Sons.	Indianapolis.	1 10001 VOU WILL DOI BE.
3111	Counsil, Billeudeu		Indiananalia	Preserved with Borax.
07777	Frankfurters.	New Tork City.	Indianapons.	Freserved with Dorax.
3777		Calaria Maria A Ca		
	Bratwurst	Gabriel Triat Co.,	T	
		Frankfurt-on-Main.	Indianapolis.	Preserved with Borax.

LARD AND LARD COMPOUNDS.

Our analyses have shown that much of the lard known as lard or pure leaf lard, contains beef stearine, put in to raise its melting point and thereby stiffen it. Pure lard must be made from the melted fat of the hog and contain no added ingredients; the incorporation of beef stearine or lamb suet constitutes an adulteration. The compounds made from cottonseed oil and beef stearine are wholesome products, but such goods must be sold for what they are and not as lards. Under the operation of the Federal Meat In-

spection Law, the addition of not to exceed 4 per cent. of lard stearine will be allowed. This ruling will be followed in this State.

Of the 42 samples of lard examined during the year, 27 have been passed as pure, while 15, or 35.6 per cent., have been adulterated, either by the addition of cottonseed oil or beef stearine.

LARD-LEGAL.

Laboratory Number	Brand.	Manufacturer.	Where Collected.	Butyro Re- frac. at 40 C.	Halphen Test.	Remarks.
139 332 316 399 1158 4983 4974 4979 4980 4981 4982 5670 6041	Danville	E. Godel & Son, Peoria, Ill. Indianapolis Abattoir -Coffin-Fietcher Meiser Co. Deschler & Co. Wm. Grund Harry Heckman Chadwick & Co.	Terre Haute. Vincennes Vincennes	51.7 50.9 51.4 51.1 48.9 49.9 50.3	None. None. None. None. None. None. None. None. None. None. None. None.	Pure. Pure. Pure. Pure. Pure. Pure. Pure. Pure. Pure. Pure.

LARD-ILLEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Butyro Refirac. Read	Halphen Test.	Remarks.
86	Pure Lard	Dan Kurtz	Alexandria	51 0	Very Strong	Largely Cottonseed oil
148	Home Ren- dered	W. B. Jones & Co	Brazil	49.8	Light	Small per cent
470	Hog Lard	H. J. Kramer	Washington	48.6	Light	Cottonseed oil Small per cent Cottonseed oil
362 0	Best Kettle Made	Court House Grocery	Indianapolis.	49.2	Medium	Much Cotton-
3621	Lard	Court House Grocery	Indianapolis.	52.2	Medium	seed oil Much Cotton- seed oil.
1606	Magnolia Leaf		New Albany.	49.2	Light	
1692	Butchers Lard	Zeinmeister Bros	New Albany.	49.8	Light	Small per cent
4973		Hilgemier & Bro	Indianapolis.	51.0	Light	Cottonreed oil
4975		Hilgemier & Bro	Indianapolis.	51.8	Light	present. Cottonseed oil
4976		Hilgemier & Bro	Indianapolis.	51.8	Light	present. Cottonseed oil
4977		Sindlinger Pro. Co	Indianapolis.	50.0	Light	present. Cottonseed oil
4984		Albert Worm	Indianapolis.	53.6	Strong	
5 9 19		Rokart Pkg. Co	Ft. Wayne	49.8	None	present. Stearine present.

OLIVE OIL.

Olive oil is the expressed oil of the mature fruit of the cultivated olive tree, and must be free from admixtures of other vegetable or animal oils. Until within recent years it has been difficult to purchase pure olive oil, but at present there is little oil imported that is not genuine. Our work shows, however, that many of the oils on the Indiana market are adulterated with cottonseed or peanut oil. Of the 188 samples examined 56, or 29.8 per cent., were adulterated. Many of these adulterated goods were pure cottonseed oil, prepared and bottled in this country under a foreign label, that of "E. Loubon et Cie, Nice," being most commonly used. Many of the druggists' samples of olive oil have been found to be pure cottonseed oil, otherwise known to the drug trade as "sweet oil." One sample marked "Pure Olive Oil," bore the following label: "Those using olive oil should be very careful to discriminate between the medicinal olive oil and the impure sweet oil, which on account of its impurities is only used for external and mechanical uses." And yet the sample was nothing but the sweet oil the customer is cautioned against using.

OLIVE OIL-LEGAL.

Laboratory Number.	Retailer.	Where Collected.	Specific Gravity.	Butyro Refracto- meter Reading at 15.50° C.	Halphen's Test.
103	Isaiah Russell	Muncie	.9168	66.6	Normal.
200	W.W. Kaufman	Terre Haute	.9163	66.8	Normal.
772	A. F. Schmidt	Washington	.9165	67.5	Normal.
787	H. J. Lindenman	Washington	.9168	66.3	Normal.
379	J. A. Risch.	Vincennes	9170	67.6	Normal.
859	J. F. Bomm	Evansville	.9164	67.8	Normal.
886	H. J. Schlaepfer	Evansville	.9163	67.6	Normal.
945	D. & H. Rosenbaum	Mt. Vernon	.9164	66.5	Normal.
972	Porter & Co	Peru	.9144	67.7	Normal.
1027	R. G. Clark.	Wabash	.9156	66.4	Normal.
1048	Fowler & Kaelin	Wabash	.9166	67.4	Normal.
1073	M. Kaylor	Huntington	.9164	67.2	Normal.
1118	J. C. Hutzell	Ft. Wayne.	.9166	67.2	Normal.
1133	A. Deutsch & Co	Oakland City	.9162	67.1	Normal.
1142	C. B. Woodworth & Co	Ft. Wayne	.9157	66.5	Normal.
1201	Meyer Bros. & Co	Ft. Wayne	.9158	67.0	Normal.
1219	Pellens & Lewis.	Ft. Wayne	.9168	66.6	Normal.
1285	Cook Grocery Co	Evansville	.9156	66.8	Normal.
1434	Tuttle & Hubble	Uuntington	.9161	66 9	Normal.
1440	McCaffrey & Co		9164	66.9	Normal.
1441	E. Ball	Huntington	9163	67.0	Normal.
1547	N A Mana & Ca	Huntington	9168	67.5	Normal.
1729	N. A. Moore & Co Houseworth Bros	Indianapolis	.9168	66.6	Normal.
1901	I a mand to Danks	Elkhart		66.6	
1944	Leonard & Bents	Elkhart	.9166	66.6	Normal.
	G. W. Rule		.9171		Normal.
2043 2065	J. M. Callender	Laporte	.9163	67.0	Normal.
	T. H. Boyd & Co		.9164	67.2	Normal.
2095	Kaplousky & Moran	Michigan City	.9159	67.2	Normal.
2109	E. W. Lindemann	michigan City	.9164	67.0	Normal.
2163	Summers' Pharmacy	Hammond	.9168	67.0	Normal.

OLIVE OIL-LEGAL-Continued.

Laboratory Number.	Retailer.	Where C	ollected.	Specific Gravity.	Butyro Refracto- meter Reading at 15.50° C.	Halphen's Test.
2222 2273 2201 2336 2397 2411 2478 2478 2412 2612 2684 25512 2684 2682 2594 2595 3596 3579 3594 3673 3683 3683 3691 3691 3691 3691 3691 3691 3691 369	Busjohn & Schneider Red Cross Pharmacy M. M. Murphy. Schultz & Borwell Anderson Drug Co. J. B. Wehrle. H. H. Ice People's Drug Store. V. E. Silverburg F. L. Saylor W. Cogswell W. Scott. W. M. Birk H. J. Huder I. N. Heims Weber Drug Co. E. H. Wilson Navin's Pharmacy J. B. Cook & Son Pettis Dry Goods Co. Court House Grocery Co. J. E. Karns Gentry Drug Store. Bowles Drug Store William C. Pfau Schwaninger Bros Charles D. Knoefel. McDonald-Stockdell Co. Conner's Drug Store Floyd Parks Doberty's Drug Store Floyd Parks Doberty's Drug Store Montani Bros B. Doolittle	Loganspo Delphi Lafayette Anderson Muncie Muncie Muncie Muncie Elwood Kokomo Indianape Indian	rt. rt. lis lis lis lis lis lis lis li	.9169 .9172 .9125 .9169	67.0 67.0 67.0 67.0 67.0 67.0 67.0 67.0	Normal. Normal.
Laboratory Number.	Retailer.		Where Col	llected.	Butyro Refractometer Reading at 15.50° C.	Halphen's Test.
6008 6024 6044 6053 6065 6070 6089 6095 6095 6351 6357 6357 6357 6357 6404 6411 6426 6496 4932 4936 4997	O. J. Beeson H. N. Jenner. O. J. Beeson P. H. Bentz C. D. Walls Houseworth Bros E. J. Finehout Co-neley Drug Co Public Drug Store Chapin Park P. W. Meissner, Jr. O. C. Bastian B. C. Zahrt A. E. Kepert K. R. Stanffer J. W. Weise B. S. Wallick Heinoman-Sievers New Land Drug Store R. E. Murphy Concentration Onk Drug Store R. E. Murphy Concentration M. W. Hamaker I. Prince Consumer Grocery Co Consumer Grocery Co Consumer Grocery Co W. A. Schofield Glick & Shane		Goshen Goshen Goshen Goshen Elkhart Elkhart Elkhart Elkhart Elkhart Gouth Bend Gouth Bend Gouth Bend Hammond H	is.	66.4 66.9 66.9 66.2 66.7 65.7 66.6 66.6 66.5 66.5 65.8 66.5 62.4	None. None.

OLIVE OIL-LEGAL-Continued.

Laboratory Number.	Retailer.	Where Collected.	Butyro Re- fractome- ter Read- ing at 15.50° C.	Halphen's Test.
5015 5076 5208 5209 5243 5268 5342 5767 5852 5855 5865 5865 5968 6902 6507 6524 6524 6529 6578	H. E. Guddis Robt. Keller Rush County Grocery A. B. Flinn Ed Goeble & Co. J. Bryan & Son H. W. Darling Blue Front Drug Store Geo. Loesch's Drug Store Christian Bros. Drug Store Christian Bros. Drug Store L. J. Zollinger Ed Mertz F. D. Hoham W. W. Jones W. Craig F. Stablhut Porter the Druggist City Drug Store E. M. Lindeman E. M. Moran L. H. Mattern Otto Negele.	Indianapolis. Indianapolis. Rushville Rushville Muncie. Williamsport Tipton. Ft. Wayne Ft. Wayne Ft. Wayne Ft. Wayne Ft. Wayne Ft. Wayne Ft. Wayne Ft. Wayne Tt. Wayne	62.5 64.2 64.2 64.1 64.3 64.3 64.5	None. None.

OLIVE OIL-ILLEGAL.

Laboratory Number.	Retailer.	Where Collected.	Specific Gravity.	Butyro Re- fractometer Reading.	Halphen's Test.	Remarks.
618 6648 6664 6700 7399 7599 7599 7599 7599 7599 7599 7599	G. Reiss. H. J. Werker. W. C. Watjen. C. P. Miller H. G. May F. S. Clapp. C. Kightly. A. Young. A. G. Troutman. Dawson & Boyce. Joe Hiney. Chiekasaw Pharm'cy. Chiekas	Noblesville Noblesville Noblesville Bloomington Bloomington	9187 92196 9196 9189 9189 9181 9181 9181 9189 9236 9214 9227 9214 9227 9218 9218 9218 9225 9204 9225 92156	70.2 70.0 70.2 70.3 70.8 65.6 73.5 71.6 71.2 70.4 72.9 72.3 69.5 68.5 67.1 71.3 72.9 71.5 67.0 71.5 67.0 71.5 67.0 71.5 71.5 71.5 71.5 71.5 71.5 71.5 71.5	Medium Medium None Trace Strong Trace Strong Strong Vedium Trace Strong Strong Strong Strong Strong Light Strong Light Moderate Moderate Moderate Moderate Slight Medium Medium Medium Medium Mone Strong Moderate Slight Strong Strong Strong Strong Strong Strong Strong Strong Strong Strong Strong Strong Strong Strong Strong Strong Strong	Contains cottonseed oil Contains peanut vil. Contains cottonseed oil. Cottonseed oil. Cottonseed oil. Contains cottonseed oil. Contains cottonseed oil. Contains cottonseed oil. Cottonseed oil. Cottonseed oil. Cottonseed oil. Contains cottonseed oil. Contains cottonseed oil. Contains cottonseed oil. Contains cottonseed oil. Contains cottonseed oil. Cottonseed oil. Cottonseed oil. Cottonseed oil. Cottonseed oil. Cottonseed oil. Cottonseed oil. Cottonseed oil. Contains cottonseed oil. Cottonseed oil. Cottonseed oil. Cottonseed oil. Cottonseed oil. Not a pure oil. Cottonseed oil.

OLIVE OIL-ILLEGAL-Continued.

Laboratory Number.	Retailer.	Where Collected.	Specific Gravity.	Butyro Re- fractometer Reading.	Halphen's Test.	Remarks.
921a 3281 3282 2499 5022 5199 5201 5202 5306 5970 6137 6158 6447	Court House Grocery Court House Grocery E P. Whinery Given-Campbell. F. B. Johnson Ashworth & Stewart. Hargrove & Mullin. C. B. Merritt. Badger & Green T. S. Kusel J. W. Temperly Shore & Wilson	Indianapolis. Muncie Frankfort Rushville Rushville Kushville Frankfort Greencastle South Bend Madison	.9228 .918 .9.6 .910 .915 .917 .915	72.6 72.5 72.5 69.1 67.0 61.4 66.5 68.2 66.4 69.0 68.3 72.4 69.7	Moderate. Strong btrong Strong	Cottonseed oil. Cottonseed oil present. Cottonseed oil present. 20% cottonseed oil present and lard oil. 20% cottonseed oil. Cottonseed oil present. Not a pure oil. Almost pure cottonseed oil. Not a pure oil. 80% cottonseed oil.

PRESERVED FRUITS, JELLIES AND JAMS.

Under this heading is put all products made from fruit and sugar, either cane or glucose, and including fruit butters, fruit preserves, fruit jellies and jams, etc.

The base of the imitation fruit jelly, jam, etc., is apple juice or apple pulp, obtained principally from the waste parings and cores of the apple drying or evaporated apple factory. These waste products are partially dried at the factory, packed in bales or barrels, and shipped to the manufacturer of fruit products at a very low cost. Upon arriving at the factory the stock is boiled for a time in open kettles and then placed in large closed copper kettles and heated by blowing with superheated steam until the clear apple juice drains out of the mass to the bottom of the kettle. It is then drawn off into tanks and serves as stock for making all varieties of iellies and preserved fruits.

For the production of a satisfactory jelly or jam large quantities of sugar are necessary for jellifying and preserving the fruit. The cost of this sugar contributes largely to the cost of manufacture. Cheaper sugars in the form of glucose and glucose syrup are therefore employed as a substitute for cane sugar. Glucose is a wholesome and nutritious article of food, and no objection can be made to its use except that products containing it are sold at prices not warranted by their actual cost. In some cases saccharin, a coal tar product of no food value but of great sweetening power, is used where a very sweet article is desired. Saccharin

has antiseptic properties which make its use profitable. Its influence on the system is not determined and its employment is not allowable.

The apple juice and glucose syrup are mixed in the necessary proportions, colored with a coal tar dye to counterfeit the genuine product; flavored with compound ethers, synthetic fruit ethers, technically known as ethyl buterate, amyl acetate, etc.; preserved by the addition of benzoate of soda or salicylate of soda, and ultimately placed upon the market as pure currant, raspberry, or strawberry jelly.

Foreign coloring matter is employed in preparing fruit products for two reasons: one is that the color of fruit is not very stable and is liable to be destroyed during the process of preserving, and, furthermore, that goods packed in glass will lose their color when constantly exposed to the light on the grocer's shelves. The other reason for the use of dye colors is that they enable the manufacturer to use fruit of deficient color and thus to conceal inferiority. Apple stock uncolored is readily distinguished, but when dved a brilliant crimson passes to the eye of the inexperienced buyer for the genuine fruit color. The preservation of this color is important, as the value of the jelly or jam for table use or in the sick room is doubtless enhanced by the attractiveness of its coloring, but the possibility for deception as to quality and purity afforded by the use of coloring matter overbalances any argument in its favor. By the judicious use of coal tar colors apple jellies flavored with small quantities of the true fruit, or by the artificial fruit ethers, can be given the appearance of the genuine article, or a cheap fruit or a vegetable pulp can be mixed into a jam, and jellies made from glucose and starch may be served to consumers who demand pure goods.

The harmfulness of the coal tar dyes depends on their composition. Many of them are quite innocuous, but are always liable to contain metallic impurities, such as zinc, copper, tin, lead, and arsenic retained during the process of manufacture. Others are distinctly injurious and entirely unsuitable for use in food products.

The cheap food products have undoubtedly become a necessity in the homes of the poor, where they have supplanted, to a large degree, more costly forms of food. But the apparent demand for low-priced food does not amount to a license to the manufacturer to place adulterated goods on our market nor authorize him to lower, still further, the cost of production by making entirely fraudulent articles that would not command a sale at any price if honestly labeled and sold for what they were.

The custom of labeling jellies made from apple stock with some trade name that does not in any way lead the purchaser to suppose he is getting something which he is not is becoming more common. The sale of the cheap and wholesome apple jellies is thus placed on an honest basis and relieves the trade of the responsibility incurred by meeting the demand for cheap goods with base imitations.

Compound fruit products can legally be sold if they are labeled "Fruit Jellies" instead of "Currant," "Strawberry" jellies, etc. and if they bear a formula correctly stating the name and percentage of the ingredients used in their production. Of the 119 samples examined 97, or 81.5 per cent., have been illegal. Some of these goods were meant to be the pure article, but the majority of them were imitations. In many instances the manufacturer had evidently attempted to mark properly his goods, but notwithstanding this he had failed to comply with all the details of the labeling clause.

PRESERVED FRUITS. JELLIES AND JAMS-LEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Benzo- ate of Soda.	Color.	Remarks.
97 248	CrabappleJelly—Purity	E. J. Dailey, Detroit	Alexandria .			Pure.
295	ler - Rex, Imi- tation Jam. Compou'd- N.Y. State Jams	Hulman & Co., Terre Haute Webster Preserv-	Terre Haute			Properly labeled.
307	RaspberryJelly— Queen City, Compound	J. Keller.	Martinsville.			Properly labeled.
335	Home Made Apple Butter	Williams Bro.Co.,	Martinsville.	Present.	1	Properly labeled.
338	Plum Preserves— Dragon	WilliamsBro.Co., Detroit				labeled. Pure.
339	Pure Apple Jelly -Lemon	WilliamsBro.Co	Vincennes	 		Pure.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Benso- ate of Soda.	Color.	Remarks.
1845	Currant Jelly-L. P. C	Louisville Pre- serve Co Louisville	Evansville		.	Properly labeled.
3684	Quince Jelly	Cruikshank Bros. Allegheny, Pa.	Irvington			Pure.
3762	Cranberry Jelly	S. B. Powers, Dayton, O.	Indianapolis.		 .	Pure.
3767	Elderberry Jelly.	Cruikshank Bros. Allegheny, Pa.	Indianapolis.			Pure.
4027	Apple Butter	72 36 37 3 4	Indianapolis.			Pure.
1428	Charm	F. MacVeagh & Co., Chicago	Huntington		·····	Properly labeled.
1464	Raspberry Jelly - L. P. C	Louisville Preserving Co., Louisville	Booneville:			Pure.
1671 3169	Plum Preserves— Morning Dew Pure Current Jel-	American Gro. Co., Louisville	Salem			Pure.
3262	ly—Silver Jelly Mince Mest—	Walsh, Boyle & Co., Chicago	Michigan Cty			Pure.
0202	Bessire & Co	B. & Co., Indpls	Indianapolis.			Pure.
3263 3363	Plum Jelly Fruit Jelly—	W. D. Huffman, Indianapolis	Indianapolis.	····		Pure.
3600	Plum Flavored Red Cherries Jam	Williams Bros. Co., Detroit	Columbus	Present	•••••	Properly _ labeled.
	1000 Choiries Cam	Reid, Murdock & Co., Chicago	Indianapolis.			Pure.
						<u> </u>
	PRESE	RVED FRUITS, JI	CLLIES AND J	AMS—IL	LEGAL.	
51	Red Currant Jel- ly-Genesee	RVED FRUITS, JE Batavia Preserve Co., Generee Co., New York	SLLIES AND J	AMS—IL	LEGAL.	Saccharine
51	Red Currant Jel-	Batavia Preserve Co., Genesee Co. New York J. Weller & Co.,	Anderson		LEGAL.	Sacchariñe and salicylic acid present.
	Red Currant Jelly-Genesee Blackberry Preserves-Queen	Batavia Preserve Co., Genesee Co. New York J. Weller & Co., Cincinnati W. J. Quan & Co.,	Anderson	Present	LEGAL.	Sacchariñe and salicylic acid present. Adulterated.
54	Red Currant Jelly—Genesee Blackberry Preserves—Queen City Pure Peach Jam	Batavia Preserve Co., Genesee Co. New York J. Weller & Co., Cincinnati W. J. Quan & Co., Chicago W. D. Huffman,	Anderson		LEGAL.	Saccharine and salicylic acid present. Adulterated. Adulterated. Saccharine
54 6 9	Red Currant Jelly—Genesee Blackberry Preserves—Queen City Pure Peach Jam Royal Blue Apple Jelly—Mrs	Batavia Preserve Co., Genesee Co. New York J. Weller & Co., Cincinnati W. J. Quan & Co., Chicago W. D. Huffman, Indianapolis Reid, Murdock &	Anderson Anderson Elwood	Present Present	LEGAL.	Saccharine and salicylic acid present. Adulterated. Adulterated. Saccharine present; adulterated.
54 69 71	Red Currant Jelly—Genesee Blackberry Preserves—Queen City Pure Peach Jam Royal Blue Apple Jelly—Mrs Jones'	Batavia Preserve Co., Genesee Co., New York J. Weller & Co., Cincinnati W. J. Quan & Co., Chicago W. D. Huffman, Indianapolis Reid, Murdock & Co., Chicago Blue Grass Can-	Anderson Anderson	Present Present	LEGAL.	Saccharine and salicylic acid present. Adulterated. Adulterated. Saccharine present; adulterated.
54 69 71 81	Red Currant Jelly—Genesee Blackberry Preserves—Queen City Pure Peach Jam Royal Blue Apple Jelly—Mrs Jones' Blackberry—Monarch	Batavia Preserve Co., Genesee Co., New York J. Weller & Co., Cincinnati W. J. Quan & Co., Chicago W. D. Huffman, Indianapolis Reid, Murdock & Co., Chicago Blue Grass Can- ning Co., Uw ensboro, Ky	Anderson Anderson Elwood	Present Present	LEGAL.	Saccharine and salicylic acid present. Adulterated. Adulterated. Saccharine present; adulterated. Salicylic acid present;
54 69 71 81 91	Red Currant Jelly—Genesee Blackberry Preserves—Queen City Pure Peach Jam Royal Blue Apple Jelly—Mrs Jones' Blackberry—Monarch Apple Butter—ky. Colonel Currant Jelly—Home Made	Batavia Preserve Co., Genesee Co., New York J. Weller & Co., Cincinnati W. J. Quan & Co., Chicago W. D. Huffman, Indianapolis Reid, Murdock & Co., Chicago Blue Grass Can-	Anderson Anderson Elwood Alexandria	Present Present Present	Conl-tar	Saccharine and salicylic acid present. Adulterated. Adulterated. Saccharine present; adulterated. Salicylic acid present; adulterated. Saccharine present; adulterated.
54 69 71 81 91	Red Currant Jelly—Genesee Blackberry Preserves—Queen City Pure Peach Jam Royal Blue Apple Jelly—Mrs Jones' Monarch Apple Butter—Ky. Colonel Currant Jelly—	Batavia Preserve Co., Genesee Co., New York J. Weller & Co., Cincinnati W. J. Quan & Co., Chicago W. D. Huffman, Indianapolis Reid, Murdock & Co., Chicago Blue Grass Canning Co., ow ensboro, Ky Crescent Preserv-	Anderson Anderson Elwood Alexandria Alexandria	Present Present Present		Saccharine and salicylic acid present. Adulterated. Adulterated. Saccharine present; adulterated. Salicylic acid present; adulterated. Saccharine present;

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Benzo- ate of Soda.	Color.	Remarks.
159	Apple Butter— Belle Farm	St. Louis Syrup and Preserve	D			
181	Raspberry Jelly Dauntless	Co., St. Louis Hulman Preserve Co., Terre Haute	Brazil Terre Haute	Present Present	• • • • • • • • • • • • • • • • • • • •	Adulterated. Decomposed
241	Strawberry Jam Rex	Hulman Preserve Co., Terre Haute	Terre Haute .	Present		apple stock; adulterated. Apple stock
268	Plum Preserves	Faulkner-Webb Co., Indpls	Terre Haute	Present		present; adulterated. Adulterated.
269 275	Currant Jelly— Banquet Currant Jelly	Lamon-Gohl Syr. Co., Chicago Chicago Syr. and	Terre Haute	Present		Adulterated.
210	Ourrant venig	Refining Co., Chicago	Terre Haute		Coal-tar dye	Saccharine present:
282 284	Peach Butter— Buffet	Ind. Wholesale Gro. Co., Indpls.	Martinsville	Present		adulterated. Made from
	berry Jelly	Champion Syrup and Refining Co. Indianapolis	Martinsville			apple stock; adulterated. Wrongly la-
318	B. & Co.'s Black- berry Pie Filling	Schrader & Co., Indianapolis	Martinaville	Present	Coal-tar	beled; adul- terated. Saccharine;
345	Home Made Plum Jelly	Mrs. Stewart, Lawrencev'le Ill.	Vincennes			adulterated. Saccharine present;
475 1233	Kenwood Rasp- berry Jelly Blackberry Flay.	Kenwood Pre. Co. Chicago	Washington			adulterated. Wholly arti-
1242	Blackberry Flav. Fruit Jelly Apple Jelly— Delmonico	Hulman & Co., Terre Haute W. D. Huffman,	Mt. Vernon	Present	Coal-tar dye	ficial; adul- terated. Adulterated.
1258	Blackberry Jam.	Indianapolis St. Louis Syr. and	Mt. Vernon	Present		Saccharine present; adulterated.
1288	Pure Quince	Pres. Co., St. Louis	Mt. Vernon	··········	Coal-tar dye	Adulterated.
1365	Jelly—Blue La- bel Currant Jelly— Sugar and Fruit	Curtis Bros. Co., Rochester		Present.	•••••	Adulterated.
1404	Plum Jelly-Mrs.	Detroit	Evansville		Coal-tar dye	Adulterated.
	Jones	Huffman & Co., Indianapolis	Huntington	Present.		Saccharine present; adulterated.
1405	Raspberry Jelly Rlackberry Preserves - Tri-	Huffman & Co., Indianapolis	Huntington	Present.	Coal-tar dye	Saccharine present;
	serves - Tri- umph, Com- pound	Dow & Snell Co., Toledo	Huntington		•••••	wrongly labeled.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Benzo- ate of Soda.	Color.	Remarks.
1427	Maraschino Cherries—Club House	Franklin Mac- Veagh & Co., Chicago	Huntington	Present.	Coal-tar	Adulterated.
1442	PeachJelly—Out- ing, Compound.	Leroux Cider and Vinegar Co., Toledo	Huntington	Present.		Adulterated.
1449	Strawberry Jelly—Genesee	Sprague, Warner & Co., Chicago	Huntington.	Present.		Apple stock;
1462	Plum Jam — Home Made	St. Louis Syr. and Refining Co., St Louis	Boonville	Present.	Coal-tar	Adulterated.
1463	Apple Butter— Gold Seal	St Louis Syr. and Refining Co, St. Louis	Boonville	Present.	dye	Adulterated.
1524	Plum Jelly-H.A.	A. Holmes, Jeffersonville	Jeffersonville			Apple juice:
1533	Plum Jelly-Pre- mium, Adulter- sted	A. Holmes, Jeffersonville	Jeffersonville		Coal-tar	adulterated. Apple juice; adulterated.
1534	Apple Butter— Empire, Adul- terated	Louisville Pre- serving Co., Louisville	Jeffersonville	Present.	-	Adulterated.
1575	Cherry P'serves— Veribest	E.Ottenheimer & Son, Louisville	Jeffersonville	Present.		Saccharine;
1604	GrapeJelly Ohio Valley	E. Ottenheimer & Son, Louisville			Coal-tar	adulterated. Adulterated.
1730	Elderberry Jelly Cruikshank's	Cruikshank Bros. Co., Allegheny,	Indianapolis.	Present.		Adulterated.
1736	Cherries, Creme de Menthe— Choice Fruit	Pa	Indianapolis	Present	Coal-tar	
176 3	Cherries, Creme de Menthe	Cincinnati Ext. Works, Cincin- nati	Indianapolis.	Present.	dye Coal-tar	Adulterated. Adulterated.
3005	Pure Apple But- ter-New Eng- land	E.E.Dailey & Co Detroit.	Kokomo	Present		Adulterated.
3012	Currant Jelly— Comet	CometPreserving Co., Chicago			Coal-tar	Adulterated.
3016	Cherries—In Creme de Violet	Cincinnati Ext. Co., Cincinnati.	Kokomo	ļ	Coal-tar	

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Benzo- ate of Soda.	Color.	Remarks.
3163	Strawberry Jam —Count	Cornet Preserv- ing Co., Chi- cago	Michigan C'y.		Coal-tar	
3236	Apple Butter	Hoosier Packing Co., Indianap-			dye	Adulterated.
3237	Currant Jelly	olis Hoosier Packing Co., Indianap-	Indianapolis.	Present.		Adulterated.
		olis	Indianapolis.		Coal-tar dye	Made from apple stock, salicylic acid pres- ent, adul- terated.
3250	Raspberry Jelly.	Elgin Dairy	Indianapolis.		Coal-tar dye	Saccharine present, adulterated.
3251 3252	Current Jelly	Elgin Dairy	Indianapolis.		Coal-tar dye	Saccharine present,
	Blackberry Pre-	B. & Co., Indpls.	Indianapolis.	Present.	Coal-tar	adulterated. Adulterated.
3261	Jelly	B. & Co., Indpls.	Indianapolis.	•••••	Coal-tar dye	Much free sulphuric acid pres- ent, adul-
3289	Currant Jelly Queen City, Compound	J. Weller & Co., Cincinnati	Indianapolis.		Coal-tar dye	terated. Compound, adulterated
3290	Orange Marma- lade, Superior	Webster Preserving Co., Webster, N. Y	Indianapolis.	Present.		Adulterated.
3313	Strawberry Jelly —Champion, Compound	Champion Syrup Refining Co., Indianapolis	Columbus		••••	Wrongly labeled,
3321	Fruit Jelly— Compound, Currant Flavor	Webster Preserv- ing Co., Web- ster, N. Y		D		labeled, adulterated
3322	Fruit Jelly— Compound, Crabapple Fla-		Columbus	Present in large amount		Adulterated.
	VOT	Webster Preserv- ing Co., Web- ster, N. Y	Columbus	Present in large amount		Adulterated.
3351	Raspberry Pre- serves—F. B. C.	Frombold Bros., Indianapolis	Columbus	Present.		Saccharine present, adulterated.
3874	Raspberry Pie Filling – B. & Co.'s MinceMeat—Old-	B. & Co., Indpls	Columbus	Present.	Coal-tar dye	Adulterated.
	fashioned	Champion Syr. and Refin'g Co., Indianapolis	Columbus		••••	Salicylic acid present, adulterated.

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Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Benzo- ate of Soda.	Color.	Remarks.
3402	Currant Jelly - NewYork State, Compound	Webster Preserving Co Webster, N. Y	Columbus	Present.	Coal-tar dye	Saccharine present, adulterated.
3403	Apple Butter— Pure	Champion Syr. and Refin's Co., Indianapolis	Columbus	Present.	Coal-tar dye	Saccharine present, adulterated.
3420	RaspberryJelly-Buffet, Com- pound	Indiana Whole- sale Gro. Co., Indianapolis	Columbus		Coal-tar dye	Wrongly la- beled, acul- terated.
3421	Currant Jelly – Buffet	Indiana Whole- sale Gro. Co., Indianapolis	Columbus		Coal-tar dye	Saccharine present, adulterated.
3422	StrawberryJelly -Buffet	Indiana Whole- sale Gro. Co., Indianapolis	Columbus	Present.	Coal-tar dye	Saccharine present, adulterated.
8423	Strawberry Pie Filling—B. & Co.'s	B. & Co., Indpls	Columbus	Present.	Coal-tar	
3434	Currant Jelly— Purity—Exwa- . co, Compound	Exley-Watkins Co., Wheeling, W. Va	Columbus		Coal-tar dye	Saccharine present, adulterated.
3435	Raspberry Jelly —Purity—Ex- waco	Exley-Watkins Co., Wheeling, W. Va	Columbus	Present.	Coal-tar	Saccharine present, adulterated
3436	Plum Jelly— Compound-Pu- rity—Exwaco	Exley-Watkins Co., Wheeling, W. Va	Columbus	Present.	Coal-tar	Saccharine present, adulterated.
	— Purity — Ex- waco, Com- pound	Exley-Watkins Co., Wheeling, W. Va	Columbus	Present.	Coal-tar	
3446	Preserved Quinces — Lippincott	Lippincott & Cree Co., Cincinnati.	Columbus	Present.		present. adulterated

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Benso- ate of Soda.	·Color.	Remarks.
3447	Strawberries— New York State Jams	Webster Preserv-				
3448	Strawberry Pre- serves-Lippin-	ing Co., Web- ster, N. Y	Columbus	Present.	Coal-tar dye	Adulterated.
	cott	Lippincott & Cree Co., Cincinnati.	Columbus		Coal-tar dye	Adulterated.
3462	MaraschinoCher-		Columbus		Coal-tar	Adulterated.
3547	MaraschinoCher- ries	Cincinnati Ext. Co., Cincinnati.	Indianapolis.	Present.	Coal-tar dye	Saccharine present, adulterated
3552 3553	Black Currant Jam Black Raspberry	Austin, Nichols & Co., New York.	Indianapolis.	Present		Adulterated.
3303	Preserves — Pur-	Cruikshank Bros. Co., Allegheny,	Indiananalia	Busant		Adulterated.
3595	Pineapple-Mon- arch, Marasch- ino	PaReid, Murdock &	Indianapolis.	Present.		
3641	Red Raspberry Preserves - Banner Brand.	Co., Chicago Lamon-Gohl Syr.	Indianapolis.		••••••	Salicylic acid present, adulterated
3646	Raspherry Jelly —Compound	Co., Chicago Webster Preserv-	Indianapolis.		Coal-tar dye	Adulterated.
		Webster Preserv- ing Co, Web- . ster, N. Y	Indianapolis.	Present	Coal-tar dye	Saccharine present.
3647	Blackberry Jelly —Queen City	J. Weller Co., Cincinnati	Indianapolis.	Present.	Coal-tar	adulterated Adulterated.
3648	Raspberry Jelly Champion	Champion Syr. and Refining Co., Indianapo- lis	Indianapolis.		Coal-tar	
3654	Black Raspberry —Thelma	Franklin Mc- Veagh Co., Chi- cago	Indianapolis.	Present.	dye	Adulterated. Salicylic acid,
3660	Strawberry Preserves — Ex- waco	Exley-Watkins Co., Wheeling, W. Va	Indianapolis.	,		adulterated Labels do not
3664	Crabapple Jelly— Compound	Webster Preserving Co., Webster, N. Y	Indianapolis			agree, adul- terated.
3666	Currant Jelly— Compound	Webster Preserving Co., Wheeling, W. Va	_			present. adulterated Adulterated.

20-Bd. of Health.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Benso- ate of Soda.	Color.	Remarks.
3674	Raspberry Preserves — Belmont	Chicago Concen- trating Co., Chicago.	Irvington	Present.		Saccharine
3764	Gooseberry Jam.	Chas. Southwell & Co., London, England.	Indianapolis.			present, adulterated. Saccharine
3768	Elderberry Jelly.	Cruikshank Bros., Allegheny, Pa.	Indianapolis.	Present		present, adulterated. Adulterated.
3769	Grape Jelly	Cruikshank Bros., Allegheny, Pa.	Indianapolis.	ĺ		Adulterated.
377 0	Apple Jelly	Cruikshank Bros., Allegheny, Pa.	Indianapolis.		1	Adulterated.
4025	Fruit Preserves— Niagara	John Boyle & Co.,	_		Coal-tar	Additorated.
4026	Grape Jelly— Compound	Baltimore, Md. Syrup Refining Co., Indianapolis			dye	Adulterated.
		Co., Indianapolis			dye	Improperly labeled, adulterated.
4028	Jelly			····· <u>·</u>	Coal-tar dye	Salicylicacid, adulterated.

PRESERVED FRUITS PUT UP IN TIN PACKAGE.

We have examined 13 samples of fruits, blackberries, strawberries, etc., put up in tin. All of the samples were pure, containing neither coloring matter or added preservatives. The difference in character between goods put up in glass and those put up in tin is very apparent.

CANNED FRUITS, CHERRIES-LEGAL

		CANNED FRUITS,	CHERRIES-I		ъ.			
Laboratory Number.	Brand.	Manufacturer or Retailer.	Where Collected.	Wt. Cont.	SO, Mgs. Per Liter.	Color.	Per Cent. Syrup.	Preserva-
1747 3585 3687 3688	Pitted	Curtice Bros. & Co., Rochester, N. Y. Reid, Murdock & Co., Chicago. Fort-Stanwix Co., Rome, N. Y. Corbin Sons & Co., Chicago.	Indianapolis. Indianapolis. Irvington Irvington	1	0.0 0.0 0.0	Natural. Natural. Natural.	37 33	None. None. None.
		BLACKBER	RIES LEGAL					
297 1759	Fredonia Beauty. Jumbo	Fredonia Packing Co., Fredonia, N. Y. Miller Bros. & Co., Baltimore.			0.0	Natural.	1 1	None.

MISCELLANEOUS CANNED FRUITS-LEGAL.

Laboratory Number.	Brand.	Manufacturer or Retailer.	Where Collected.	Per Cent. Syrup.	SO, Mgs. Per Liter	Color.	Preserva- tive.
1740	Jones' Favorite Apple Sauce	W. N. Clark & Co.,	T., 31 32	66.0			N
1741	Table Preserves, strawberries	Rochester, N. Y. Curtice Bros.,	_		0.0		None.
3627	Strawberries	Rochester, N. Y. Miller Bros. & Co.,			0.0	Natural.	
3679	Monogram Apri-	Baltimore, Md. J. C. Perry & Co.,	Indianapolis.	76.0	0.0	Natural.	None.
3686	Hartland Fancy	Indianapolis,	Irvington	51.0	0.0		None.
	Yellow Peaches		Irvington	32.0	0.0		None.

BLACK RASPBERRIES-LEGAL.

Laboratory Number.	Brand.	Manufacturer or Retailer.	Where Collected.	Wt. Cont. in Gms.	SO. Mgs. Per Liter.	Color.	Per Cent. Syrup.	Preserva- tives.
3592 3711	Monarch	Reid, Murdock & Co., Chicago, Ill. Kidwell Bros. & Co., Baltimore	Indianapolis. Irvington	632 538	0.0	Natural.	32 50	None.

CANNED GOODS. VEGETABLES.

One of the leading staples of the modern grocery store and an essential of every well-stocked larder is an assortment of canned vegetables. These goods are put up in tin and sterilized by heat and will keep indefinitely in any climate, thus providing the table with apparently fresh vegetables when they are long out of season or can not be obtained. Of the 20 samples of sweet corn analyzed, 15 were pure, free from preservatives, saccharin or bleach. Four contained saccharin and one sample was a field corn boiled until soft and mixed with corn meal gruel. It was solid in the can and possessed none of the qualities of a sweet corn.

Canners and packers are accustomed to regulate the value of their output by increasing or diminishing the quantity of water in which the goods are packed. The least quantity of water found was 61 per cent. and the largest amount 82.6 per cent. That is, the first sample contained 39 per cent. of solid matter, the second 17.4 per cent., or less than one-half as much. The weight of the contents of the cans varied from 567 to 616 grams.

Of the ten samples of canned peas examined five were pure and five adulterated. One sample was a "soaked" pea, that is, made by swelling up dried peas and canning them as fresh, though it is obvious that goods so packed lack the fresh, succulent flavor which makes the vegetable desirable.

Four samples contained saccharin. Some years ago saccharin was extensively used by packers, but at present no up-to-date house relies on this coal tar sweetener as a substitute for sugar. None of the peas were colored with salts of copper. The use of copper in greening vegetables is not an American trick and most of the goods so colored are of French origin.

All of the canned tomatoes were pure, free from added color and preservative.

Two of the three baked beans were pure. One contained saccharin. The same ratio of adulteration was found in the canned beans, one sample of which was sweetened with saccharin.

Four of the six samples of mushrooms were illegal, two because of the presence of sulphurous acid, one because it was sour and one sample consisted of pieces and stems.

Two of the five samples of asparagus contained small quantities of sulphurous acid.

CANNED GOODS-SWEET CORN-LEGAL.

Laboratory Number.	Brand.	Manufacturer or Wholesaler.	Where Collected.	Wt. of Con- tents of Can in Gms.	Water Per Cent.	80, Mg. Per Liter.	Acidity as c. c. n/10 Na OH per 100 c.c.	Preserva-
1700	DITT: 4277	701 - 107 111 -		1				
1722	"Hindi"	The Wayneville				l	1	ļ
		Can Co., Wayne- ville, O	Indianapolis.	552		0.0	12.0	i
1716	"Patter's United	VIIIe, U	Indianabous.	002	• • • • • •	0.0	12.0	
1710	"Betty's Hulled Green"	A. E. Betty Can		1				i
	Green	Co., Dayton, O.	Indianapolis.	605	61.0	0.0	16.0	1
3241	"Empire"	Winters &	Indianapolis.		01.0	0.0	10.0	
0211	Billipho	Prophet, Mt. Mor-		1			1	1
		ris, N. Y	Indianapolis.	580	81.8	0.0	15.6	l
3253	"Swain's Best"	ris, N. Y C. W. Swain Can						
		Co., Salina, O.	Indianapolis.	585	76.4	0.0	20.0	
3273	"Logan Elm"	Scioto Canning		1				
	_	Co., Circleville,				١		
		Ohio	Indianapolis.	622	75.8	0.0	13.2	
3291	"Summer Gar-							
	den''	Chambers Can				Ì		
		Co., Lewis-	T. 31 11.	200	82.6		35.0	
3297	"Holly"	walsh-Boyle Co.,	Indianapolis.	602	82.0	0.0	15.0	• • • • • •
3201	Holly	Chicago.	Indianapolis.	575	78.0	0.0	13.2	
3596	"Cording's	Chicago.	Indiadapons.	310	10.0	0.0	30.2	
0030	Choice'	Coal Creek Can		1				
	Onoice	Co., Wingate,		1			1	
		Ind	Indianapolis.	580	77.8	0.0	12.0	
3688	"Delicious"	Chambers Can		555		3.0		
		Co., Lewis		ļ	l			
			Indianapolis.	602	81.0	0.0	12.8	

CANNED GOODS-SWEET CORN-LEGAL-Continued.

Laboratory Number.	Brand.	Manufacturer or Wholesaler.	Where Collected.	Wt. of Con- tents of Can in Gms.	Water Per Cent.	SO, Mg. Per Liter.	Acidity as c.c.b.10 Na OH per 100 c.	Preserva-
3639	"El Mar"	Brinkmeyer, Kuhn & tlo., In-						
3667	"Silver Dollar" .	dianapolis Silver Creek Pre serv. Co., Silver	Indianapolis.	578	76.2	0.0	12.8	
3681	"Emerald"	Creek, N. Y. Portland Pack	Indianapolis.	567	74.0	0.0	13.6	
3682	"Fame''	ing Co., Port- land, Me Grafton Johnson	Irvington	589	79.1	0.0	12.0	
		Co., Green wood.	Irvington	584	78.6	0.0	14.0	
3690	"Algonquin"	Pt. Stanwix Can	Irvington	566	80.6	0.0	8.0	
1726	"Winore Ker- neled"	Co., Rome, N.Y. Winore Can Co.,	TLAIRREOU	500	ov.0	0.0	8.0	•••••
		Dayton, O	Indianapolis.	616	71.5	0.0	24.0	

CANNED GOODS-SWEET CORN-ILLEGAL.

1751	"Premier"	Francis, Leggett & Co., New York		597	79.1	0.0	12.0	Sac- cha- rin.
3588	"Wish Bone"	J. F. Humphreys Co., Blooming- ton, Ill	Indianapolis.	586	78.1	0.0	•••••	Sac- cha- rin.
3626	"Holly"	Walsh, Boyle & Co., Chicago	Indianapolis.	579	72.8	0.0	15.6	Sac- cha- rin.
3708 3254	"King" *Cook's Delight	Grafton Johnson, Greenwood, Ind. Warrensburg Can	Irvington	609	79.2	1.3		Sac- cha- rin.
UAD T	COUR & Deligite	Co., Warrens- burg, Ill	Indianapolis.	566	79,9	0.0	2.8	Not a sweet corn.

^{*}Made from field corn and corn meal.

CANNED PEAS-LEGAL.

Laboratory Number.	Brand.	Manufacturer or Retailer.	Where Collected.	Per Cent. H.O.	Wt. Conts. in Gms.	SO, Mgs. per Liter.	CC n 10 Na OH per 100 Gms.	Preserva- tives.	Remarks.
3294	Noble	Yale Canning Co.							
		Yale, Mich.	Indianapolis	45	601	0.0	17.6		
3295	Silver								
3296	Dollar YalePride	Yale Canning Co.	Indianapolis	36	616	0.0	21.6		
3250	1 wier Line	Yale, Mich.	Indianapolis	42	569	0.0	20.4		Hard.
3589 3689	PettisOwn Polk's	Indianapolis	Indianapolis	45	601	ŏ.ŏ	16.8		maru.
5555	Best	J. T. Polk Co.,	Taminatan	.,	501		15.0		
		Greenwood, Ind.	Irvington	34	581	0.0	15.2		

CANNED PEAS-ILLEGAL.

Luboratory Number.	Brand.	Manufacturer or Retailer.	Where Collected.	Per Cent. Hr0.	Wt. Conts.	SO, Mgs. per Liter.	CC to Ng. OH per 100 Gms.	Preserva- tives.	Remarks.
3274	Standard.	MartinsvilleCan- ning Co., Mar							
3293	Calumet	tinsville	Indianapolis	44	594	0.0	12.0	Saccharin	
3493	Calumet	Baltimore.	Indianapolis	47	575	0.0	9.6		Soaked Peas.
3623	Little Hoosier.	J. C. Perry & Co., Indianapolis.	Indianapolie	50	598	0.0	8.0	Saccharin	
3625	Silver Dollar	Silver Creek Pre- serve Co., Chau-							
3709	Bay View, Early	tauqua, N. Y	Indianapolis	47	600	0.0	11.2	Saccharin	
	June	Bay View Can Co. Huron, N. Y.	Irvington	13	595	0.0	24.0	Saccharin	Rotten

CANNED GOODS--TOMATOES-LEGAL.

Laboratory Number.	Brand.	Manufacturer or Retailer.	Where Collected.	Wt. Con- tents.	Per Cent.	SO, Mes. Per Liter.	Color.	Preserva-
3235 3272 3292	Buffet Standard. Cadet	Indianapolis. Martinsville Canning Co., Martinsville, Ind. J. C. Perry & Co.,	-	967	94.2 94.8 93.6	0.0	Nat'ral Nat'ral Nat'ral	None.

CANNED GOODS-BAKED BEANS-LEGAL.

Laboratory Number.	Brand.	Manufacturer or Retailer.	Where Collected.	Preservatives.
1758	Phoenix	Schnull & Co., Indianapolis	Indianapolis	None.
3680	Polk's Best	J. T. Polk, Greenwood, Ind	Irvington	None.

CANNED GOODS-BAKED BEANS-ILLEGAL.

3624	Мау Day	Greenwood Packing Co., Greenwood, Ind.	Indianapolis	Contains Sac- charin:
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CANNED BEANS-LEGAL.

			CANNED BEA	NS-FEG	AL.					
Laboratory Number.	Brand.		Manufacturer or Retailer.	Where Collecte	d.	Fer Cent. H ₂ 0.	Wt. Cont.	SO, Mgs. Per Liter	CCn/10NaOH Per 100 Grams.	Preservatives
1754 3629	Golden Wax.	Cu Jo	rtice Bros., Rochester N.Y. hn Fisher & Co., Baltimore, Md.	Indianap Indianap	- 1	42 38	559 573	1	13.2	:
			CANNED BEAR	NS-ILLE	GAL.					
3587	Monarch			Indianap	olis.	23	530	0.0	10.4	Sac- char- in.
		(DANNED GOODS, MU	SHROOM	S—LE	G A	L.			
Laboratory Number.	Brand.		Manufacturer or R	etailer.	C	Wh	ere cted	1	Per Liter.	erks.
4450 4451	Champignons Cr. Choix Champignons Bland's Ext	ra.	N. Y. Store Indiana N. Y. Store Indiana				- 1	Legal	i.	
		C	ANNED GOODS, MUS	HROOMS-	-ILL	EG.	AL			
Laboratory Number.	Brand.	Ma	nufacturer or Retailer	Whe	re ted.	80. M.cs.	Per Liter.	1	Remarks	
3760 8761 3785 4449		Ro	uis Freres & Co., Franc dier Fils & Co., Bordeau Bordeaux, Franc	Indian	apolis apolis	1. 14 1.	0.6 1.8 0 0	fites Conta Corro	rved wit . Corrode ins sulfit ded top.	ed top. es. Sour.
			OANNED GOODS, AS	PARAGUS	-LE	GA.	Ն.			
Laboratory Number.	Brand. Manufacturer or Retailer. Where Collected.					80, Mgs. Per Liter.				
1738 3628 8691	Ceres C. C. C Phoenix	••••	M. C. Shea & Co				. 0.0			
		C	ANNED GOODS, ASP	ARAGUS-	-ILL	EG.	AL.			
1743 3784	Signature		Hickmott Asparagus Corvilles Pk. Co., San	Canning C Bouldin Is Francisco	o., land, o, Cal	Cal	In In	diana diana	polis	5.10 7.70

SPICES.

At the time of the opening of the Laboratory, if the statements of wholesalers in spices are to be believed, the Indiana public did not know the character of pure spices, and was only content when supplied with imitation goods which contained so much starch, ground cocoanut shells and sawdust that the most susceptible palate would not respond unless tempted with teaspoonful doses.

We were informed that if pure, full strength goods were sold, the consumer would return them because their strong characteristic flavor excited his suspicions.

The results of the examination of 248 samples of spices corroborated in a measure this statement of the trade.

In the January Bulletin of this year we said:

"Of 68 samples of ground cloves purchased from drug stores 22, or 32.4 per cent., were adulterated by reason of added cocoanut shells, dirt, etc., while of 52 samples collected from grocery stores 25, or 48.1 per cent., were impure.

"One sample of ground cloves consisted of wheat starch, cayenne pepper and a small amount of cloves, and other samples were almost entirely cocoanut shells.

"Twenty-three samples of ground mustard were examined and seven proved to be grossly adulterated with wheat or corn starch colored with turmeric.

"Seven samples of capsicum, or cayenne pepper, out of 22 examined were adulterated.

"But the pepper samples were most heavily adulterated and of 84 samples analyzed 47, or 55.9 per cent., were impure.

"Ground olive stones are evidently the chief adulterant, although the various starches are much used. Some samples contained ground olive stones, wheat and buckwheat flour, together with a small percentage of pepper."

Our analyses of spices collected the summer following the opening of the Laboratory showed a very great difference in the quality of the spices sold; but six of 52 black peppers and one of 35 cloves were impure. This remarkable improvement is due to the position taken by the wholesalers and spice grinders of Indiana, who since the publication of our first analyses have refused to handle other than pure goods. Their repeated statement that the

spice business has never been better than during the last year is a sufficient denial of their former argument that pure spices were not in demand by their customers.

It is only fair to the manufacturers to say that the analyses following were made on old goods, probably put in stock by the retailer before the pure feod law went into actual effect.

BLACK PEPPER-LEGAL.

	DUACK FEFFER-DEORD.						
Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Remarks.			
327	Strictly Pure	Thompson & Taylor,	Martinsville	Pure.			
393 404	Sterling Dove	Chicago, Ill. Jos. Strong, Terre Haute Frank Tea and Spice Co.,	Vincennes	Pure.			
482	Monarch	Cincinnati, O. Reid, Murdock & Co.,	Vincennes	Pure.			
580 1009	••••	Reid, Murdock & Co., Chicago, Ill. Bought of J. S. Modison. Bought of Chickasaw	Washington Terre Haute	Pure.			
1036 1068		Pharmacy Bought of R. E. Clark	Peru Wabash	Pure. Pure.			
1144	St. George	Bought of Butterbough & Co Louis Seits Gro. Co.,	Wabash	Pure.			
1174	Dove	Evansville Frank Tea and Spice Co.,	Oakland City	Pure.			
1184	т. & т	Cincinnati, O. Thompson & Taylor	Princeton	Pure.			
1189		Spice Co., Chicago, Ill. Hulman & Co.,	Princeton	Pure. Pure.			
1209	••••	Terre Haute, Ind. Bought of Meyer Bros. & Co	Ft. Wayne	Pure			
1228	Pure	Frank Tea and Spice Co	Mt. Vernon	Pure.			
1234	Mall	Cincinnati, O Frank Tea and Spice Co, Cincinnati, O.	Mt. Vernon	Pure.			
1251 1270	Dove	Frank Tea and Spice Co., Cincinnati, O.	Mt. Vernon	Pure.			
1275	Pure	Hulman & Co., Terre Haute, Ind. Sherman Bros. Co.,	Mt. Vernon	Pure.			
1282	Strictly Pure	Chicago, III.	Mt. Vernon	Pure.			
1370	Pure	Meyer Bros. Coffee and Spice Co., St. Louis, Mo. Woolson Spice Co	Evansville Evansville	Pure. Pure.			
1461 1478	Mi-Go	Lafayette Gro. Co., Lafayette, Ind. Meyer Bros. Coffee and	Huntington	Pure.			
1487	i ute spice	Spice Co., St. Louis, Mo. Frank Tea and Spice Co.,	Boonville	Pure.			
1495	St. George	Cincinnati, O. Lewis Seitz Gro. Co.,	Boonville	Pure.			
1499		Evansville, Ind. Lewis Seitz Gro. Co., Evansville, Ind.	Boonville	Pure.			
1527	Newton's	Newton Tea and Spice	Boonville Jeffersonville	Pure.			
1568	Pure	Co., Cincinnati, O Woolson Spice Co., Cincinnati, O.	Jeffersonville	Pure.			
1584	Golden Rod	Ullmann, Dreifus & Co., Cincinnati. O.	Jeffersonville	Pure.			
1616		Woolson Spice Co., Toledo, O.	New Albany	Pure.			
1622 1662	Premier	Francis H. Leggett & Co., New York	New Albany	Pure.			
1668 1668	Golden Rod Pure	Ullmann, Dreifus & Co, Cincinnati, O. Woolson Spice Co.	Salem	Pure.			
.000	_ 41 0	Woolson Spice Co., Toledo, O.	Salem	Pure.			

BLACK PEPPER-LEGAL-Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Remarks.
2935 2296 3157 3350	Ed. Haas' Choice	F. Widlar & Co., Cleveland, O. M. W. Edmond Thompson & Taylor, Chicago, Ill.	Kokomo Delphi Michigan City	Pure. Pure. Pure.
3371	Table Pepper	Jno. Vorwald Knight & McLain	Columbus Columbus	Pure. Pure.
		BLACK PEPPER-	ILLEGAL.	
320	••••	Geiger-Tinney Co., Lafayette, Ind.	Martinsville	Adulterated with for-
322		Frank Tea and Spice Co., Cincinnati, O.	Martinsville	eign starch and olive stones. Adulterated with buckwhest.
424		Jos. Strong & Co., Terre Haute	Washington	Adulterated with ground olive stones.
454	Nickel.	E. Bierhause & Sons, Vincennes Hulman & Co.,	Washingten	Adulterated with wheat flour.
1140		Terre Haute Bement Seits,	Washington	Adulterated with buckwheat.
1156	•••••	Evansville, Ind. J. F. Bruning & Co., Evansville	Oakland	Adulterated with ground olive stones. Adulterated with for-
1183		Gillett, Chicago	Princeton	eign starch. Adulterated with wheat flour and ground clive stones.
1192 1199	Ceylon	Lewis Seitz Gro. Co., Evansville	Princeton	Adulterated with wheat starch.
1204	pound)	Parson & Scoville, Evansville Jno. N. Bey & Co.,	Princeton	Adulterated with wheat flour.
1256	Dove	Vincennes Frank Tea and Spice Co.,	Princeton	Total ash, 7%; insoluble ash 92%.
1330		Cincinnati, O. Karn & Co., Evansville	Mt. Vernon Evansville	Adulterated with ground olive stones. Adulterated with ground olive stones.
1366	Strictly Pure	Woolson Spice Co	Evansville	ground olive stones. Adulterated with ground olive stones.
1371 1418	Pure Brunings High Grade	J. F. Bruning & Son, Evansville	Evansville	Adulterated with for- eign starch.
	III GIUGU	J. P. Dieter & Co., Chicago	Huntington	Adulterated with for- eign starch.
1519 15 39		A Holmes	Huntingburg	Adulterated with for- eign starch.
1545		A. Holmes, Jeffersonville Louisville Spice Co.,	Jeffersonville	Adulterated with ground olive stones.
1591		Louisville, Ky. A. Kahn, Louisville, Ky.	Jeffersonville Jeffersonville	Adulterated with for- eign starch. Adulterated with
1649	India Mills (com-	Englehart & Co.,		wheat flour and ground olive stones.
	pound)	Louisville, Ky.	New Albany	Adulterated with wheat flour and buckwheat flour.

BLACK PEPPER-ILLEGAL-Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Remarks.
1667	Standard	Standard Spice Mills, St. Louis, Mo.	Salem	Adulterated with wheat starch.
1680		Cabell, Banye & Co., Louisville, Ky.	Salem	Adulterated with buckwheat and
1690	•••	Ullman-Dreifus Co., Cincinnati, O.	Salem	ground olive stones. Adulterated with wheat flour.
1707	. 	Bought of Williams Bros.	Salem	Adulterated with ground olive stones.
1714	Singapore	S. P. Dieter Co., Chicago, Ill.	Kokomo	Adulterated with
2908		Bought of H.J. Huder	Indianapolis	ground olive stones. Adulterated Total ash, 6.19%; insolu-
2985		Thompson & Taylor Co Chicago, Ill.	Kokomo	ble ash, 2.21%. Adul erated with corn starch and
2993			Kokomo	ground olive stones. Adulterated with wheat starch and ground olive stones.
3010	Anchor	Richmond Extract Co., Richmond	Kokomo	Adulterated with ground olive stones.
3057		F. P. Wilt & Co., Ft. Wayne	Ft. Wayne	Adulterated with ground olive stones.
3116		Thompson-Taylor Co., Chicago	South Bend	Adulterated. Total ash, 6.97%; insolu- ble ash, .66%.
3148		Steele-Wedeler, Chicago, Ill.	Michican City	Adulterated with shells and wheat starch.
3309		Bought of Court House Grocery Co	Indianapolis	Adulterated with ground olive stones.
3359		Heekin Spice Co., Cincinnati, O.	Columbus	Adulterated with ground olive stones.
3374	Reed's	Reed, Henderson & Co., Chicago	Columbus	Adulterated with ground olive stones.
3377		Grocers' Supply Co., Indianapolis	Columbus	Adulterated with for- eign starch.
3378		Bought of J. B. Cook & Son	Columbus	Adulterated with for- eign starch.
3407		Heekin Spice Co., Cincinnati, O.	Columbus	Adulterated. Total ash, 6.94%; insolu-ash, .80%.
3128		Bought of Jose Newson & Son	Columbus	Adulterated with wheat starch and ground olive stones.
3441	•••••	J. C. Perry and Co., Indianapolis	Columbus	Adulterated with corn starch.
3561		Bought of A. Bushman	Indianapolis	Adulterated with wheat flour.
3637		Wixon & Co Chicago, Ill.	Indianapolis	Adulterated with ground olive stones.
3724		Bought of Court House Grocery	Indianapolis	Adulterated with ground olive stones.

BLACK PEPPER-ILLEGAL-Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Remarks.
3728	Good	Bought of Court House Grocery	Indianapolis	Adulterated with wheat starch and
3751	Finest Quality	J. B. Bright & Son	Indianapolis	ground olive stones. Adulterated. Total ssh, 7.11%; insol-
3833		······	Bloomington	uble ash, 1.01%. Adulterated with wheat and buck- wheat flour and ground olive stones.

GROUND MUSTARD-LEGAL.

1147		Parson & Scoville,		
	ļ	Evansville	Oakland City	Pure.
1176	Malabar	Frank Tea and Spice Co.,		
		Cincinnati	Princeton	Pure.
1496	St. George	Lewis Seitz Gro. Co		
1705	Royal		200201110111111	1 4.0.
1.00	100,01	Boston	Kokomo	Pure.
2997	Globe		MOROMO	I ult.
2001	G1006		Kokomo	Pure.
3319		H. J. Tooley		Pure.
3323		G O S-1-134		
3361			Columbus	Pure.
3410		Heekin Spice Co.,		_
			Columbus	
3432		Nixon & Co., Chicago	Columbus	Pure.
3452	· · · · · · · · · · · · · · · · · · ·	Kothe, Wells & Bauer.		
		City	Columbus	
3472		H. I. Quick	Columbus	Pure.
3479	Gillies Spice			
	Mills	E. J. Gillies & Co., N. Y.	Columbus	Pure.
3738			Indianapolia	Pure.
3749	Finest Quality	W. B. Bright & Son	Indianapolis	Pure.

GROUND MUSTARD-ILLEGAL.

-	-	Martinsville	Adulterated with wheat starch.
••••	Frank Tea and Spice Co , Cincinnati	Evansville	Adulterated with wheat starch.
	E. W. Gillette, Chicago	Boonville	
•••••	Knight & McLain	Columbus	Adulterated with foreign starch.
	J. B. Cook & Son	Columbus	Adulterated with wheat starch and colored with turmeric.
• • • • • • • • • • • • • • • • • • • •	Heekin Spice Co., Cincinnati	Columbus	Adulterated with
	Court House Grocery	Indianapolis	wheat starch. Adulterated with corn starch.
		Frank Tea and Spice Co. Cincinnati E. W. Gillette, Chicago. Knight & McLain. J. B. Cook & Son. Heekin Spice Co., Cincinnati	Cincinnati E. W. Gillette, Chicago. Knight & McLain

CAYENNE PEPPER-LEGAL.

Number.	Brand.	Manufacturer.	Where Collected.	Remarks.
21		Jos. Strong & Co.,_		_
87	H. & Co	Terre Haute. Hulman & Co	Washington	Pure.
٠.	11. 12. 00	Terre Haute.	Mt. Vernon	Pure.
67	. <u>.</u>	Bought of Geo. L. Hoehn		Pure.
52	Royal	Dwindell & Wright,	TT	D
79	Meyer Bros. Pure	Boston, Maes. Meyer Bros. Coffee and	Huntington	Pure.
	MOJO: D.00.1 4.0	Spice Co., St. Louis, Mo.	Boonville	Pure.
44		R. J. Thornton.		
91		Louisville, Ky. Heekin Spice Co.,	Jeffersonville	Pure.
301		Cincinnati, O.	Columbus	Pure.
169		Heekin Spice Co		
478	African	Cincinnati, O.	Columbus	Pure.
110	Airican	Bennett, Simpson & Co., London, Eng.	Columbus	Pure.
739		Bought of Pettis Dry		
		Goods Co	Indianapolis	Pure.
336 210	•••••••	Schnull & Co		Pure. Pure.
22		Meyer Bros. & Co		Pure.
173		Summer's Pharmacy	Hammond	Pure.
354		J. D. Bartlett	Lafayette	Pure.

CAYENNE PEPPER-ILLEGAL.

Laboratory Number.	Manufacturer.	Where Collected.	Total Ash.	Insoluble Ash.	Remarks.
504 601 834 1963 3726 438	Bought of Court House Grocery Co S. Herr. G. W. J. Hoffman A. G. Troutman Houseworth Bros Court House Grocery. Jno. N. Bey & Co., Vincennes.			2.03	Adulterated with wheat starch. Adulter'd with much foreign starch. Adulter'd with much foreign starch. Adulter'd with much foreign starch. Adulterated. Heavily adulter'd with wheat starch. Heavily adulter'd with wheat flour.

. ALLSPICE-LEGAL.

Laboratory Number.	Brand.	Manufacturer or Retailer.	Where Collected.
389 477 1067 1197 1250 1257 1276 1361 1389 1480 1486	Standard Pure. Dove Pure Perfect. Meyer Bros. Pure Spice	Frank Tea & Spice Co., Cincinnati, O	Wabash. Ft. Wayne. Mt. Vernon. Mt. Vernon. Mt. Vernon. Evansville. Huntington.

ALLSPICE-LEGAL-Continued.

Laboratory Number.	Brand.	Manufacturer or Recailer.	Where Collected.
1500 1531 1541 1541 1565 1586 1618 1703 2045 2045 2094 3004 8058 3114 3159 3301 3369 3369 3342 3430 3445 34743 3750	Pure Pure Golden Rod Pure Pimem to Royal. Triumph. Quaker	Lewis Seitz Gro. Co., Evansville, Ind R. J. Thornton, Louisville, Ky R. J. Thornton, Louisville, Ky Woolson Spice Co., Toledo, 9 Ullmann, Dreifus & Co., Cincinnadi, O. R. J. Thornton & Co., Louisville, Ky Dwinell-Wright Co., Boston, Mass F. W. Meissner, Laporte, Ind Wells-Yeager-Best Co., Lafayette, Ind Thompson & Taylor Co., Chicago, Ill F. Widlar & Co., Cleveland, O. F. Widlar & Co., Cleveland, O. Grocers' Supply Co., Indianapolis, Ind Thompson & Taylor Co., Chicago, Ill Durand & Kasper, Chicago, Ill Thompson & Taylor Co., Chicago, Ill Court House Gro. Co., Indianapolis, Ind E. J. Gillies & Co., New York. Heckin Spice Co., Cincinnati, O. Nixon & Co., Chicago, Ill Schnull & Co., Indianapolis, Ind Kothe, Wells & Bauer, Indianapolis, Ind Pettis D. G. Co., Indianapolis, Ind J. B. Bright & Son, Indianapolis, Ind Schnull & Co., Indianapolis, Ind	Latayette. Kokomo Kokomo. Kokomo. Kokomo. Ft. Wayne. So. Bend. Michigan City. Michigan City.
	<u> </u>	ALLSPICE-ILLEGAL	
236 302 522 171 317 472	Pure	F. C. Diets, Mt. Vernon, Ind Sherman Bros. & Co., Chicago, Ill Hulman & Co., Terre Haute, Ind H. S. Quick, Columbus, Ind H. J. Fooley, Columbus, Ind	Columbus.
		GINGER-LEGAL.	
Number.	-	Retailer.	Where Collected.
947 789 1976 2012 2170 2201 2252 2252 2252 2252 2253 2456 3551 456 357 7747 7747 7747 7749 8210 986	Housworth Bros Myers Drug Store. O. C. Boston. Summers Pharmacy. W. C. Letherman. G. W. Hoffmann Rogan Bros. J. D. Bartlett Cassell Bros. Buck & Brickley. Physicians Drug Store W. H. Bireley City Drug Store E. D. Robinson J. H. Green. F. H. Gerhart S. Rosenthal L. T. Harker		Mt. Vernon. Rikhart. South Bend. South Bend. Hammend. Valparaiso Logansport. Lafayette. Lafayette. Anderson. Anderson. Muncie. Alexandria. Alexandria. Alexandria. Riwood. Kokomo. Tipton. Tipton. Indianapolis.

GINGER-LEGAL-Continued.

Laboratory Number.	Retailer.	Where Collected.
3507 992 1128 1840 1896 1910 1939 2023 2023 2024 2142 2142 2366 2534 2676 2821 2821 3511 3899 3932	C. L. Mitchell Blue Drug Store J. C. Hutzell H. M. Phillips F. J. Goldman Leonard & Bents O. J. Beeson A. Coonley & Co. R. P. Milton J. M. Callender J. W. Weis Corner Drug Store Wells Yeager-Best Co. Shaw & Jackson Jay Bros H. Mehlig Navin's Pharmacy No. 1 Frank E. Ross A. N. Truitt B. Doolittle Doherty's Drug Store	Ft. Wayne. Auburn. Auburn. Elkhart. Elkhart. Goshen. South Bend. South Bend. Laporte. Hammond. Valparaiso. Lafayette. Muncie. Kokomo. Tipton. Indianapolis.
	GINGER-ILLEGAL.	
2854 2893		dulterated with round olive stones

GROUND CLOVES—LEGAL. Collected from Drug Stores.

Laboratory Number.	Brand.	Druggists.	Where Collected.	Total Ash.	Insoluble Ash.	Remarks.
577		J. S. Madison	Terre liaute			Pure.
615		Baur	Terre Haute			Pure.
653		H. J. Werker	Vincennes		l	Pure.
669		W. C. Watjen	Vincennes			Pure.
684		R. G. Moore	Vincennes			Pure.
702		C. S. Miller	Vincennes			Pure
883		Meek & Albers	Evansville			Pure.
883 932		Dawson & Boyce.	Mt. Vernon	5.71	0.32	Pure.
975		Porter The Druggist	Peru			Pure.
1065		Butterbaugh & Co	Wahash	l		Pure.
1195		H. G. Sommers	Ft. Wayne			Pure.
1211		Meyer Bros. & Co	Ft. Wayne		l	Pure.
1813		Ashton Stamen	Auburn			Pure.
1909		Leonard & Bentz	Elkhart			Pure.
1964		Public Drug Store	South Bend.			Pure.
1997		C. Coonley & Co	South Bend.			Pure.
2027	····	D. C. Peters	Laporte			Pure.
2028		F. W. Meisner	Laporte			Pure.
2056		T H. Boyd & Co	Laporte		l	Pure.
2105		E. W. Lindemann	Michigan City			Pure.
2141		J. W. Weis	Hammond			Pure.
2156		M. Kolb	Hammond			Pure.
2240		Ben Fisher	Logansport	l	l	Pure.
2281		Red Cross Pharmacy	Logansport			Pure.
2281 2294		M. W. Edmonds	Delphi		l	Pure.
2334		W. W. Johnson	Lafayette			Pure.
2426		J. B. Wehrle	Anderson		l	Pure.
2440		City Drug Store	Anderson			Pure.
2467	•••••	Buck & Brickley		· · • · · ·		Pure.

GROUND CLOVES—LEGAL-Continued. Collected from Drug Stores.

Laboratory Number.	Brand.	Druggiets.	Where Collected.	Total Ash.	Incoluble Ash.	Remarks.
2496 2537 2549 2577 2589 2604 2612 2678 2692 2746 2796 2822 2837 2934 3508 3512		People's Drug Store. Shaw & Jackson Physicians Drug Store. City Drug Store. B. C. Robinson F. C. Jones. Stringfellow & Co Jay Bros L. Mehlig F. H. Gerhart S. Rosenthal H. Mehlie. Francis Pharmacy E. W. Stucky I. N. Heims C. L. Mitchell A. W. Truitt	Muncie	4.14	0.19	Pure. Pure. Pure. Pure. Pure. Pure. Pure. Pure. Pure. Pure. Pure. Pure. Pure. Pure. Pure. Pure. Pure.
'		Collected from	Grocery Store	e.		·
236 401	Crystal Dove	Hulman & Co., Terre Haute Frank Tea & Spice Co.,	Terre Haute .			Pure.
422		Cincinnati Jos. Strong & Co., Terre Haute	Vincennes Washington			Pure. Pure.
455 .479	Monarch	Terre Haute	Washington			Pure.
1141 1172	Dove	Chicago	Washington Oakland City.			Pure. Pure.
1179		Cincinnati Hulman & Co., Terre Haute	Princeton Princeton			Pure.
1182 1235	T. & T	Thompson & Taylor Spice Co., Chicago Frank Tea & Spice Co.,	Princeton			Pure.
1266 1360	Pure	Geo. L. Hoehn Thompson & Taylor,	Mt. Vernon Mt. Vernon .			Pure. Pure.
1387	Perfect	Chicago Huntington Grocery Co., Huntington E. R. Durkee & Co., N.Y.	Evansville Huntington			Pure.
1406 1493	Gauntlet St. George	Lewis Seitz Gro. Co., Evansville	Huntington Boonville			Pure.
1503 1587	Golden Rod	Lewis Seitz Gro. Co., Evansville Ulmann Dreifus Co.,	Boonville			Pure.
2988		Cincinnati Thompson & Taylor, Chicago	Jeffersonville Kokomo			Pure.
3068 3113		A. H. Perfect & Co., Ft. Wayne Thompson & Taylor Co.,	Ft. Wayne			Pure.
3146		Chicago Durand & Kasper. Chicago	South Bend Michigan City			Pure.
3156 3175		Thompson & Taylor, Chicago Walsh, Boyle & Co.,	Michigan City			Pure.
3389		Chicago Heekin Spice Co., Cincinnati	MichiganCity Columbus			Pure.
3411 3429		J. C. Perry Co., Indianapolis Wixon & Co., Chicago	Columbus			Pure. Pure.
3476	Gillies Mills spices	E. J. Gillies & Co., N. Y.	Columbus			Pure.

GROUND CLOVES-ILLEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Total Ash.	Insol. Ash.	Remarks.
437		John N. Bey, Vincennes	Washington			Adulterated with coccanut shells.
1155	••••	Bruning & Co., Evansville	Oakland City			Adulterated with
1177	Malabar	Frank Tea & Spice Co., Cincinnati	Princeton			Adulterated with cocoanut shells.
1227	Pure	Frank Tea & Spice Co., Cincinnati	Mt. Vernon			Adulterated with cocoanut shells.
1252	••• ••••	Frank Tea & Spice Co., Cincinnati	Mt. Vermon			Adulterated with
1277		Sherman Bros. & Co., Chicago	Mt. Vernon			cocoanut shells. Adulterated with
1283		Meyer Bros. Coffee and Spice Co , St. Louis	Evansville			cocoanut shells. Adulterated with
1301	Pure	Sherman Bros. & Co., Chicago	Evansville			wheat starch. Adulterated with
1329		Karn & Co., Evansville.	Evansville			cocoanut shells. Adulterated with cocoanut shells and wheat starch.
1468		Bement, Seitz & Co., Evansville	Booneville			Adulterated with
1507	Pure	Arabian Mills, Chicago.	Huntingburg.		ļ	cocoanut shells. Adulterated with cocoanut shells.
152		Hulman & Co., Terre Haute	Huntingburg.			Adulterated with coccanut shells and wheat starch.
1529	Pure	R. J. Thornton & Co., Louisville	Jeffersonville			Adulterated with cocoanut shells.
1542		R. J. Thornton & Co., Louisville	Jeffersonville			Adulterated with cocoanut shells.
1566 1590	Pure	Woolson Spice Co., Cincinnati Thornton, Louisville	Jeffersonville Jeffersonville			Adulterated. Adulterated with
1646	Pure	R. J. Thernton & Co., Louisville	New Albany.			cocoanut shells. Adulterated with
299 8	Triumph	Grocers Supply Co., Indianapolis	Kokomo			cocoanut shells. Adulterated with
330 0		Court House Grocery. (west) Indianapolis	Indianapolis		ļ	cocoanut shells. Adulterated with
3347		C. C. Sheidt	Columbus			cocoanut shells. Adulterated with
3356		John Vorwald	Columbus .			foreign starch. Adulterated with
3144 3454 3471	Quaker	Indianapolis	Columbus Columbus Columbus	14.47 10.71	4.34 2.08	cocoanut shells. Adulterated. Adulterated.
3740 600		Pettis Dry Goods Co G. W. J. Hoffman	Indianapolis Terre Haute		0 82%	shellsand stems;
626 717		G. Reiss	Terre Haute Princeton	5.86	0.62	adulterated. Adulterated. Adulterated with
1035 1882		R. E. Clark Central Drug Store	Wabash	1	1.14 0.69	starch. Adulterated. Adulterated.

21-Bd. of Health.

GROUND CLOVES-ILLEGAL-Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Total Ash.	Insol. Ash.	Remarks.
1978		Meyers Drug Store	South Bend			Adulterated with cocoanut shells
2011 2186 2213		O. C. Boston Corner Drug Store Heineman & Sievers	South Bend Valparaiso Valparaiso	8.07	1.27	Adulterated. Adulterated. Adulterated with
226 8		W. H. Porter	Logansport			cocoanut shells. Adulterated with large amount of
23 07		M. M. Murphy	Delphi	6.19	1.02	cocoanut shells. Adulterated with cocoanut shells
256 2		W. H. Bireley	Alexandria			Adulterated with wheat starch and
26 56		W. Cogswell	Elwood			cayenne pepper. Small amount of stems; adultera- ted.
2807 2850 2866		L. T. Harker W. M. Birk. A. B. Carr	Indianapolis.	8.31	1.07 -0.50	Adulterated. Adulterated. Cocoanut shells present; adul-
28 1 9 29 18		F. H. Carter	Indianapolis. Indianapolis		0.58	terated. Adulterated. Cocoanut shells present; adul-
2967 2961		E. H. Wilson Navin's Pharmacy No.1	Indianapolis. Indianapolis.			terated. Adulterated. Adulterated with
3533		Will E. Axline & Co	Noblesville	· 	••••	foreign starch. Heavily adultera- ted with cocoa-
3546		A. G. Baldwiff	Noblesville			nut shells. Adulterated with cocoanut shells.

MISCELLANEOUS SPICES-LEGAL.

2838	Powd. Ginger Jama	Francis Pharmacy	Indianapolis
4352	Triumph Ginger	Sent in by Grocers' Supply Co	Indianapolis
4164	White Pepper	Sent in by Schnull & Co	Indianapolis. 3.80%
4165	Cinnamon	Sent in by Schnull & Co	Indianapolis. 3.2.7
4167	Ginger	Sent in by Schnull & Co	Indianapolis. 6.75%
4168		Sent in by Schnull & Co	
4173			
4175		Sent in by Schnull & Co	
4177		Sent in by Schnull & Co	
4178	Diudem Sage	Sent in by Schnull & Co	Indianapolis, 4.87%
4180			Indianapolis, 3.179
		Sent in by Schnull & Co	
		Sent in by Schnull & Co	
4184	Quaker Mose	Sent in by Schnull & Co	

TOMATO CATSUPS.

We have examined 75 samples of tomato catsup and found 67, or 89.3 per cent., to be adulterated. The adulteration in many instances was due to the use of benzoate of soda as a preservative without declaring the fact on the label. Other samples contained coal-tar dye or an excess of starch. Under the ruling of the State Board of Health one-tenth of one per cent. of benzoate of soda can

be used in making tomato catsup if the fact of its presence is stated on the label, but coal-tar dye or other dye is not allowable. Tomato catsup naturally made is brown in color, and the unnatural desire on the part of the consumer for a highly colored product, together with the fact that the use of color made it possible to employ green and inferior stock, induced the manufacturer to resort to artificial color. At the present time, however, the public taste has completely changed, and all high grade catsups are now sold uncolored. The use of starch as a filler and of saccharin as a sweetener is both illegal and unnecessary. Several bottles of artificial goods bore a compound label which was pasted directly on the bottom of the package in such a way that its presence would not likely be detected. Such labeling is an evasion of the law as the goods might as well bear no label whatever.

TOMATO CATSUPS-LEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Benzo- ate of Soda.	Color.	Starch.	Remarks.
140	Lippincott.	Lippincott Co., Cincinnati	Brazil	Present.			Legally la-
1424	Club House.	Franklin Mac- Veagh & Co., Chicago	Huntington		•		beled.
1435	Chili Sauce.		Hundingson				rure.
		N. J	Huntington	Present.			Legally la-
1443	Beefsteak	Joseph Camp- bell Preserve Co., Camden, N.J					
387	Hoffman House	J. Weller Co.,	Huntington	Present.	Cochineal		Legally [a- beled.
	nouse	Cincinnati, O.	Vincennes.	Present.	· ,		Legally la-
3449	Lippincott.	Lippincott & Cree Co., Cin- cinnati	Columbus	Present.			
3 554	Blue Label.	Curtice Bros, Rochester, N.		İ		i	pered.
		Y	Indianapo- lis	Present.	Cochineal		Legally labeled.
1576	Pure Gold	J. Weller & Co., Cincinnati, O.	Jefferson- ville	Present.			
					dye	Excess	Legally la beled.

TOMATO CATSUPS-ILLEGAL.

							
Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Benzo- ate of Soda.	Color.	Starch.	Remarks.
68 235	Sunny Side	Tip-Top Ketch- up Co., Cincinnati	Elwood	Present.	Coal-tar dye	Excess	Bulk goods; sancharin present; adulter'd.
283	Yankee Doodle	Hulman & Co., Terre Haute American Rel-	Terre Haute	Present.		Excess	Ad ultera'd.
291	Bordesux.	ish Co., Indianapolis Standard Pack-	Martins- ville	Present.		Excess	Adulters'd.
		ing Co., Indianapolis	Martins- ville	Present.			Ad ultera'd.
299	Butler's Tomato Ketchup	Tip-Top Ketch- up Co., Cincinnati	Martins-			m _	
300	Tobasco Pepper	Geo. A. Boyle St. Louis	ville Martins-	Present.		Excess	Ad ultera'd.
366	Standard	Hirsh Bros., Loui # ille	ville Vincennes.	Present. Present.	Coal-tár dye	Excess	Adultera'd
3 6 7	Phoenix Home Made	Standard Pack-	W:	D4			labeled; adulter'd.
369	Ever'body's	ing Co Greenwood Packing Co., Greenwood, Indiana	Vincennes.	Present.		Excess	Label on bottom; il- legally
1395 1414	Old Tavern. Standard	Berdan & Co., Toledo Hirsh Bros.,	Huntington	Present.		Excess	labeled. Adultera'd
		Louisville	Huntington	Present.	· · · · · · · · · · · · · · · · · · ·	Excess	Saccharin present; adulter'd.
1415	Perfect	A. H. Perfect & Co., Ft. Wayne	Huntington	Present.	Coal-tar dye,		Adultera'd
1621	Sunlight	Royal Packing Co., Chicago	Huntington		Coal-tar dye		Saccharin present; adulter'd.
1445	Matchless	Acme Preserve Co., Adrian, Mich	Huntington	Present.	Coal-tar dye	Excess	Adultera'd
1367	Butler's	Tip-Top Ketch- up Co., Cincinnati, O.	Evansville.	Present.		Excess	Saccharin present; adulter'd.
1467	Star	Star Packing Co Hamilton, O.	Boonville	Present	Coal-tar dye	Excess	Adultera'd
1476	Hirsh's Standard.	Hirsh Bros., Louisville.	Boonville	Present.	Coal-tar	Excess	Saccharin
				:			present; illegally labeled.

TOMATO CATSUPS-ILLEGAL-Continued.

Laboratory Number.	Bŕand.	Manufacturer.	Where Collected.	Benzo- ate of Soda.	Color.	Starch.	Remarks.
1290	Blue Label.	Curtice Bros. Co., Roches- ter, N. Y	72	D			A 3 14 23
1506	Home Jer-	Jersey Pack Co.	Evansville.	Present.			Adultera'd.
1523	May Day	Hamilton, O. Greenwood	Huntingb'g		Coal-tar dye	Bxcess	Adultera'd.
		Pickling Co., Greenw'd, Ind.	Huntingb'g	Present.	Coal-tar dye		Improperly
1558	Goodman's High Grade	Kahn & Co.,					labeled.
		Louisville	Jeffers' ville	Present.	Coal-tar dye	Excess	Saccharin present, adulter'd.
1672	Cadet	J. C. Perry & Co., Indiana- polis, Ind	Salem	Present.			Adultera'd.
1677	Hoosier	Crescent Pack- ing ('o., In- dianapolis	Salem		Coal-tar	7	S 3 3
3008	Queen of the Gas Belt	Spencer & Ho-			dye	Excess	Saccharin present. adulter'd.
3069		gin Co., Ma- rion, Ind Am. Relish Co.,	Kokomo	Present		Excees	Adultera'd.
	Hero	Indisuspolis.	Kokomo	Present in exc's.	Coal-tar dye	Excess	Adultera'd.
3062	Perfect	A. H. Perfect, Ft. Wayne	Ft. Wayne .	Present.			Adultera'd.
2063	Mother's Choice	Early Packing Co., Xenia, O.	Ft. Wayne .	Present in exc's.			Adultera'd.
3150	Pride of England	Van Camp Packing Co.,	Mich. City.	Present.			Adultera'd.
3168	Matchless	Indianapolis. Acme Preserv- ing Co., Adri- an, Mich	Mich. City	Present			Adulters u.
				in exc's.	Coal-tar dye	Slight Excess	Adultera'd.
3181	Home Made	C. F. Claussen & Son, Chicago	Hammond .	Present in exc's.	Coal-tar		
3238	Acme	Thatcher, Kell- er Co., Indpls	India'polis.	Present.	dye Coal-tar dye	Excess	Adultera'd. Adultera'd.
3256	Yankee Doodle	Am. Relish Co., Indianapolis.	India'polis.	Present	Coal-tar		
32 43	El Mar	Brinkmeyer, Kuhn & Co,	T31-111	in exc's.	dye	Excess	Adultera'd
3280	Rose Bud	Indianapolis. Bt. of Court House Groc'y	India'polis.	Present.			Adultera'd.
3288		Co., Indpis Bt. of Court	India'polis.	Present in exc's.	Coal-tar dye	Excess	Adultera'd.
		House Groc'y Co., Indpls	India'polis.	Present in exc's.	Coal-tar dye	Excess	Adultera'd.
3373	Bxcellent	Excellent Can- ningCo.,Indi- anapolis	Columbus	Present.			Adultera'd.

TOMATO CATSUPS-ILLEGAL-Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Benzo- ate of Soda.	Cólor.	Starch.	Remarks.
3406	Log Cabin	Marion County Preserving Co Indiana- polis	Columbus	Present.			Saccharin
3424	Butler's	Tip-Top Ketch- up Co., Cin-					present, adulter'd
377	Live Oak	cinnati Hamilton Can-	Columbus .	Present.	Coal-tar dye	Excess	Illegally la beled.
		ning Co., Hamilton, O.	Vincennes.		Coal-tar dye	Excess	Adultera'd
344 0 441	Cadet Delmonico.	J.C.Perry & Co, Indpls., Ind.	Columbus		Coal-tar dye		Adultera'd
321	Dei monico.	W D. Huffman & Co., Indpls.	Washingt'n	Present.	Coal-tar dye	Excess	Saccharin present; adulter-
474	Standard	Exley-Watkins Co., Wheel- ing, W. Va	Washingt'n	Present.	····	Excess	Saccharin present; illegally labeled.
3597	Love Apple	Greenwood, Ind	Indpls	Present.			Saccharin present; adulter- ated,
3 598	Polk's Best	J.T.Polk & Co., Greenwood, Ind	Indpls	Present.			Adultera'd
120)	Bordeaux .	Standard Pack- ingCo.,Indpls	Princeton	Present.	Coal-tar dye		Saccharin present; adulter- ated.
3619 1215	Butler's	Huffman & Co., Indianapolis. Tip-Top Ketch-	Indpls	Present.	Coal-tar dye	Excess	Saccharin present; adulter- ated.
3644	Sweet Home	up Co Cin- cinnati Sweet Home	Princeton	Present.	Coal-tar dye	Excess	Illegally labeled.
1000	7	Catsup Co., Indpls	Indpls	Present.	Coal-tar dye	Excess	Adultera'd
1230	Kentucky Moonshine	Kentucky Can- ning Co., Ow- ensboro, Ky	Mt. Vernon		Coal-tar dye	Excess	Illegally
3651	Rose Bud	Court House Grocery Co, Indianapolis.	Indpls	Present.	Coal-tar		labeled.
1245	Del monico.	W. D. Huffman, Indianapolis.	Mt. Vernon		dye Coal-tar	Excess	Adultera'd
					d ye.	Excess	Saccharin present; adulter- ated.

TOMATO CATSUPS-ILLEGAL-Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Benzo- ate of Soda.	Color.	Starch.	Remarks.
1268	U.S	Standard Packing Co., Indianapolis.	Mt. Vernon	Excess Present.	Coal-tar		Adultera'd
1292		J. T. Polk Co., Greenwood, Ind	Evansville.	Present	Coal-tar	Slight	114416014
1842	Daisy	W.D. Huffman, Indianapolis.	Evansville.	Present.	Coal-tar dye	Excess	Adultera'd Saccharin present; adulter-
4579 4855	Royal Blue	Co Chicago	Noblesville	Present.	Normal	None.	ated Adultera'd
		Co.,Richmo'd	Indpls	Present.	Normal	None.	Saccharin present.
5240 5708	Home Made	T. A. Snider & Co.,Cinci'nati W. J. Quan Co.,	Muncie	Present.	Coal-tar	None.	Adultera'd
5888	B. B. B	Chicago Lisbon Pickle	Elwood	Present.	Normal	Pre'nt	Adultera'd
5919		Works Crescent Pres. Co, Indpls	Ft. Wayne. Danville	Present.		None.	Saccharin present.
6028	Everybodys	Greenwood Pk.	Goshen	Present.	dye Normal	Pre'nt None.	Adultera'd Saccharin present.
6037 6045	Butler	H. Wichert, Chicago Tip-Top Ketch-	Goshen		Normal	Much.	Adultera'd
		up Co., Cin- cinnati	Elkhart		Coal-tar dye	Pre'nt	Saccharin present.
6083	Matchless	Acme Pres. Co., Adrian, Mich.	Elkhart	Present	Normal	Pre'nt	Adultera'd
6092	Silver Seal.	Walsh, Boyle Co., Chicago	Elkhart	Present.	Coal-tar	Pre'nt	Adulteratd
6105	Monarch	Reid, Murdock & Co., Chicago	South Bend	Present.	Coal-tar dye	Nor-	Adultera'd

BEERS. WINES AND SUMMER DRINKS.

While certain classes of beverages, notably those containing greater or less quantities of alcohol, are consumed throughout the year, during the hot summer months the people demand a light, refreshing, attractive beverage that is not consumed at other seasons. In the summer months, too, the consumption of malt liquors is largely increased. The number and variety of the summer drinks is very large. For the most part they are produced by bottlers and dealers who supply the local market, although certain of the fruit juices have obtained a widespread sale through-

out the country. In order to determine the purity of these summer drinks we have collected and analyzed many samples of the products sold on the Indianapolis market. The results of our analyses follow the remarks under each class described below,

BEER.

The production of malt liquors in this country as an industry is second only in importance to the production of breadstuffs. Their consumption is steadily on the increase, as is also the amount consumed in proportion to other kinds of alcoholic beverages. Beer is prepared largely from malted grain, usually barley, although other substances, such as corn, rice and glucose, frequently enter into its composition. Properly defined, beer is a beverage produced by alcoholic fermentation from a hopped infusion, either of malted cereals, preferably malted barley exclusively, or with the addition of unmalted or prepared cereals. Besides the malt and sugars which enter into the composition of beer, and which, in the form of infusions, are converted by yeast into alcohol, hops are also employed to give a palatable bitter to the product. sides the malt or some fermentable sugar and the hops no other constituent should be present. The chemical composition of the finished product is, however, very complex, the principal constituents being alcohol, various sugars and carbohydrates, nitrogenous matter, carbonic, acetic, succinic, lactic, malic, and tannic acids, bitter and resinous extractive matter from the hops, glycerine and various mineral constituents, consisting mainly of phosphates of the alkalies and alkali earths.

The names given to different kinds of malt liquors relate to various attributes, as the country where they were produced, as English, German, Bavarian beer, etc. Thus porter is simply a beer of high percentage of alcohol and made from malt dried at a somewhat high temperature, which gives it its dark color. Ale is a pale beer, likewise of high attenuation and made of pale malt, with more hop extract than porter. Stout has less alcohol and more extract and still less hops than porter. These terms are used chiefly with reference to English malt liquors. The terms used for German beers, such as Erlanger, Munchener, etc., are for the most part names of places, and are applied to beers made in im-

itation of the beers originally brewed in those cities. Export beer is beer that is specially prepared with a view to long-keeping qualities.

The analyses made at this Laboratory comprise 27 samples, this number being about all of the different brands and varieties of beer obtainable in Indianapolis. The analyses were made principally for the purpose of determining the extent and nature of their adulteration or the use of antiseptic and preservative agents. As a basis for determining adulteration, however, it is necessary to know the chemical composition of the sample, and for that reason a complete analyses of all the beers has been made. Results of the analyses show very little adulteration either in imported or domestic beers. Several of the samples examined, namely, Nos. 4349, 4355, 4358 and 4359, contain sulphurous acid or sulphites; none contained benzoic or salicylic acids, and but one sample, which was a Weiss beer, contained saccharin. An examination of the tabulated results shows that none of the beers departed widely in composition from the normal products. The imported beers have a high alcohol and extract content, and were brewed from a much heavier wort than were the domestic beers. From a chemical standpoint the domestic beers were very uniform in composition, there being no great difference in either the alcohol or extract content.

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		`	vity.							.grab.		Polarization	sation,	vity,	•:	-16		.abo8	.bi	
Number.	Brand.	Manufacturer.	Specific Grass. C. at 20° C.	Alcohol, gm per 100 c. c	Extract, gra per 100 c. c	Arh gms. pe 100 c. c.	Рровррогіс	Total Acida, Lactic.	Vol. Acids, i	Reducing Range Bases	Dextrin.	Direct.	Invert.	Specific Gra	Extract origination	Degree of Fe mentation	SO2, mg. per liter.	Penzoate of	oA vilvoils?	Saccharin.
212	Bohemian	American Brewing			8			ç			8	3	5	9			76 01			
213	Duesseldorfer	Indianapolis Brewing	1.0145	3.63	87.0		<u> </u>	er.	210.		725	0.14	4.08	1,0473	4C.21	8 8 8	10.24	<u> </u>	1	ı
-	Dir. Diller	Ind.	1.0132	4.21	4.98	.138	.132	8	.012	1.40	2.12	+39.4	+40.9	1.0628	13.31	66.92	17.92		ı	_!_
\$17	Blue Kibbon	. 2	1.0125	3.51	5.61	114	\$.180	88	1 80	2.95	+488	+49.2	1.0481	12.75	58 99	14.08	1	١	_1
917	Export Pale	Anneuser busn co.,	1.0149	8.4	5.46	.160	6 6	.180	.012	8	2.11	+39.4	+43.5	+43.5 1.0510 13.52	13.52	63.14	8.98		1	ı
218		Co., Terre Haute, Ind.	1.0191	80.4	5 58	.126	760	88	.018	1.77	2.54	+43.8	+41.5	1.0641	13.64	62.60	7.68	1	_1	ı
612		0	1.0099	4.27	4.50	.166	010	.144	.018	1.09	2.00	+320	+33.4	1 0412	13.04	69.18	14.08	1	1	1
	Pilsner Export	F. Hollender & Co.,	1.0135	3 87	20.00	200	990.	171.	.012	1 82	99.	+83.2	+87.8	1.0482	12.79	63.93	12.80		1	
8	Budweiser Lager	Anbeuser Bush Co., St. Louis, Mo.	1.0135	4.27	5.34	.137	.074	171.	170	1.78	2.41	+42.4	+44.0	1.0659	14.88	61.04	14.08	1	- 1	1
3		Co. Indianapolis,	1.0221	3.93	8	81.	86	嚣	98.	26.	1.71	+ 5.4	+368	1 0479	12.69	65.40	86.	. 1	1	- 1
88		ŏ :	1.0118	3 72	5 23	.136	97.	.144	.012	1.98	1.92	+38.2	+38.4	1.0478	12.67	61.86	10.24		ı	1
20 2	Lemp's Extra Pale	Co , St. Louis, Mo	1.0111	69.	4.63	.117	946	207	.012	1.29	2 31	+37.2	+39.1	1.0483	12.81	67.43	10.24	١	-1	1
Ž	Progress brand- Duesseldorfer	Indianapolis Brewing Co Indianapolis,	3		. ;		-													
343	Sedererbran Nürn-	Ind	8 6 7 7	4.16	3	3	§	8	8	1.57	1.87	4.22	4 6 6	1.0489	12.95	96. 1-96.	19.20	1	1_	1
9	berg	. Metzger Co, Indianapolis, Ind.	1.0099	8.	4.58	.182	8	207	210	ន	1.87	+31.6	+29.0	1.0181	12.76	67.65	16.64	1	- 1	1
2	Bohemian	J. Metager Co , Indianapolis, Ind. 1.0171	1.0171	3.76 7.14	7.14	282	28	.136	.012	2.00	3 70	8 70 +59.2	+62.5	+62.5 1.0551 14.64	14.64	54.32	27.32	1	_1	_!

MALT EXTRACTS.

True malt extract is a syrupy fluid made by extracting and digesting coarsely powdered malt with water and evaporating the strained liquid to the consistency of thick syrup. Such an extract contains at least 70 per cent. of maltose and converts starch very rapidly. At the present there are on the market a very large number of so-called malt extracts which are widely advertised as a tonic and nonintoxicating malt food. These extracts are, for the most part, simply heavy beers, containing considerable quantities of alcohol and extract and no diastase. Two of the three samples of so-called malt extract examined contained 5 per cent. of alcohol each and 8 per cent. and over of extract, largely maltose. In other respects the samples were merely heavy beers. The third sample analyzed was of quite different composition, being low in alcohol and high in extract.

.bi	eA oilvoila8		<u>:</u> :	<u>:</u> :	<u>:</u>
.abog	Benroate of		<u>:</u>	:	<u>:</u>
	SO ₂ , mg. per		9	17.12	28.16
-10	Negree of F goisting		9	10.01	53.24
(saiz	Extract, Orl	17.00	11.35	17.67	18.78
vity, Vort.	art officed B V Lanigiro	1 007.1	8.1	1.0663	50.2 1.0703 18.78
ation.	Invert.			104.8 + 119.7 1.0663	+ 50.2
Polariz	Direct.	4 62 6	3	+ 104.8	4.75 1.79 + 59.2 +
	Dextrine.	- £	:	+ 87.9	1.79
gara,	Reducing SubsA	5	3	83. 83.	4.75
84	Vol. Acids, Acetic.	5	3	2610.	210.
98	Total Acid, Lactic.	ğ		83	.126
.bioA	Phosphorio	610	•	\$.047
100	'Asb, g. per	2		8	.3060
per	Extract, g.	8		14.31	8.78
100	Alcohol, g.	2		88.	.0247 5.00
vity,	Specific Gra 20°0.	1,005	1.000	1.0669	
	Manufacturer.	McAvoy Brewing Co.,	Anheuser-Bush, St.	Louis, Mo	Milwaukee, Wis
	Brand.	Malt Marrow	1246 Malt Nutrine	"Best Tonio"	
	Laboratory Number.	124	3	8	3

MALT EXTRACTS.

WINES.

American wines are rapidly becoming known for their excellent qualities and are competing with European brands for a reputa-That there are many imitation wines on the market has been common knowledge, but the most pessimistic observer would hardly wish to concede that more than 50 per cent. of the cheap wines never saw a grape. The results of the analyses of 20 samples of wines purchased at drug stores and grocery stores show The first seven samples analyzed were wholly this to be a fact. artificial products. They were made by soaking fruits, possibly raisins, fortifying the extracts with 12 to 15 per cent, of alcohol, adding large quantities of glucose, in one instance over 20 per cent., and in addition sweetening with saccharin to further develop the sweet taste. These samples contain salicylic acid and benzoate of soda as well as the saccharin, which is of itself a pre-Evidently the original maker used a preservative to stop fermentation, and then the bottler used some more preservative of a different character to keep the goods after they had left his hands. The two blackberry cordials examined were entirely artificial, and consisted of glucose syrup colored with coal-tar dye and preserved with salicylic acid and benzoate of soda, flavored with synthetic flavors to counterfeit the missing blackberry. Wine has been adulterated for 2,000 years, but the harvest time of the manufacturer of artificial goods is evidently the present. An attractively labeled bottle marked "Purity Guaranteed," and filled with a decoction of salicylic acid, benzoate of soda, saccharin, glucose, grain alcohol, synthetic flavors, glycerine, coal-tar dye and water, meets a ready sale as pure California port or sherry, depending upon the aromatic employed.

Samples Nos. 1782, 1783, 1784, 3548, 3788, 5789 and 3790 are evidently grape products of a fair degree of purity, although of poor quality. Most of them contain either saccharin or some preservative which necessitates their being classed as illegal.

Samples Nos. 3787, 3791 and 3792 are evidently pure and free from any preservatives or saccharin.

TOOM	Laboratory Nu	3787 3791 3792	1	1772 1773 1774 1776 1776 1776 1776 1776 1776 1776
	Brand.	Alameda Zinfandel Sonoma Sherry Alameda Burgundy.		Cal. Sherry Wine Wine Water Ca- Lawet Ca- Port Port Port Port Blackberry Claret Claret Sweet Ca- Eawba Sherry Port Burgund Reisling Reisling Reisling Reisling Reisling Reisling Reisling Reisling Reisling Reisling Reisling
Je v	Specific Gravit			1 1 1 1 1 1
.emu	Alcohol by Vol			3.24 0.52 1.53 3.05 1.53 8.72 8.72 8.36 1.59 1.59 1.59 1.59 1.59 1.59 1.59 1.59
90L	Alcohol, gms. r	11.03 16.28 10.58		10.5 9.335 10.36 10.36 10.36 10.36 11.25 11.36 11.36 11.57 11.57
100	Glycerol, gm. p	1.003 l: .871 l: .914 l:		1.069 1.231 7.032 7.030 7.019 7.019 7.019 8.019 8.019 8.019 7.025
'lod	Glycerol—Alco Katio.	1: 11.0 1: 18.7 1: 11.6		1: 10 1:
10	Extract, gm. pe	64 60 64	-	6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
0	0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0		-	25 55 55 55 55 55 55 55 55 55 55 55 55 5
	Ash, gm. per lo	2720 1: 2720 1: 2400 1:	-	1250 1:45 1:150 1:45 1:25 1:45 1:25
	Extract Ash, En	6.4.5	-	<u> </u>
	Fixed Acids, gr	.744 .432 .567 .276 .720 .348	-	286 128 128 128 128 128 128 128 128 128 128
	Vol Acids, Rm	:	A	26
' 1	Vol. Total Acid	242 1:3.07 221 1:2.5 298 1:2.4	INES-ILLEGAL	8 9 14-00-00-00-00-00-00-00-00-00-00-00-00-00
	Free Tartaric A	77 .150	F	121 128 128 128 128 128 128 128 128 128
[atoT	Tartaric Acid, gm. per 100 c	.164	LEG	44 112 112 112 1138 110 1138 110 1138 110 1138 110 1131 1131
' 91	Pot. Bi-Tartrai	.0752 .1504	AL.	.056 .0652 .0757 .0757 .0758 .0757 .0862 .0862 .0862 .0862 .0862 .0862 .0862 .0862
tion.	Bairact Polariza			+ ++++++++++++++++++++++++++++++++++++
. noit	Bairalo Treval		_	+ +++++ + + + + + + + + + + + + + + +
	Reducing Suga	- 6, 6	-	7. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5.
. 0	gm. per 100 c.	2.000.1	-	66.58 10 10 10 10 10 10 10 10 10 10 10 10 10
	Protein, gm. po	1509 (0.0755		1053 0 10
	Total Sulphuric	0.8000		0.000 0.0011:00 0.0019:00 0.0019:00 0.0019:00 0.0019:00 0.0019:00 0.0019:00 0.0019:00 0.0009:00 0.0009:00 0.0009:00 0.0009:00 0.0009:00 0.0009:00 0.0009:00 0.0009:00
.0.	Potassium Sult gm. per 100 c	.0318		.0332 1
٠.5	Phosphoric Ac gm. per 100 c Tannin, gm. pe	. 08351 . 0760		0.0272 0.0468 0.0468 0.0550 0.0550 0.0550 0.0572 0.
	100 c. c.	.057 0.07 .024 0.15 .066 0.12		
	кт. рег 100 с	15 :: :	1.	3. 968
	Color			Acid fu Acid fu Acid fu
	ř.			fuchein fuchein fuchein fuchein
Preservative.	Balicylic Acid.			+ +++ + +
i ve	Benzoate of Soda.	1 1 1	1	+ +++++ + + + + + + + +++ + +

GINGER ALES.

Ginger ale is a nonalcoholic beverage made by carbonating a dilute solution of extract of ginger, sugar and some simple acid in water. It is a pleasant and refreshing beverage when properly prepared. The formula employed and the method of preparation varies greatly with the different manufacturers. Examination of the analyses shows very little uniformity of composition. amount of residue on evaporation varies from 3 to 20 per cent. and the sucrose content from nothing to 8.44 per cent. sweet drink is desired, many of the manufacturers resort to the use of saccharin to develop this taste, since saccharin is much less expensive than sugar and is not fermentable but is in itself a preservative. The use of saccharin is condemned by most medical authorities and all food experts. It was formerly much used by canners and packers of vegetables, such as tomatoes, sweet corn, etc., but at the present time it is no longer employed by reputable manufacturers. It has no place in the manufacture of a summer drink and its use should be discontinued. One sample was preserved with salicylic acid and one was colored with dinitrocresol.

GINGER ALES.

						1	å	Acids.	Polarization.	sation.	•	-07		. e l	da.
Laboratory.	Brand.	Manufacturer.	Specific Grav. C. C.	Alcohol, gms	Extract gms. per 100 c. c.	Ash. gms. pe 100 c. c.	Total, as Citrio.	Volatile, as	Direct	Invert.	Sucrose, gma	Immersion I fractomete 30°C.	.aixadooa8	Benzoate Sod	Salicylate Bo
623 623 623 623 623 623 633 633 633	Aromatic Delatour Richelteu Ginger Ale Imperial	C. Habieh Co., Indianapolis Klee & Coleman, Indianapolis Acklen C. Schuyler, New York Sprauer, Warner Co., Chicago Walsh, Boyle & Co., Chicago Grau Bottling Works, Indianapolis Yuneker Bottling Works, Indpla. J. Metzger Co., Indianapolis Aquos Dist, Water Co., Indianapolis	1.0407 1.0136 1.0136 1.0130 1.0100 1.0279 1.0270	<u> </u>	10.8 3.61 10.03 14.08 2.86 7.53 9.74	8288888	ಚ ಚಚನ ;ಗಳನ	<u> </u>	+ + + + + + + + + + + + + + + + + + +		# 0.00 + 1.00 + 10	27.22.23.24.25.00.00.00.00.00.00.00.00.00.00.00.00.00	Present Present None None None Present Present None	P C C C C C C C C C C C C C C C C C C C	NNODE NNODE NODE NODE NODE

MISCELLANEOUS FRUIT BEVERAGES.

Three of the four ciders analyzed were preserved with either benzoic or salicylic acid and the fourth sample was entirely artificial; three of the five grape juices contained sulfurous or salicylic acid. Of the four lime juices examined three were of full strength and free from preservatives. Of the four root beers analyzed three were free from preservatives, saccharin or glucose. One of the samples contained 40.96 milligrams of SO₂ per liter, which had evidently been added as an antiseptic.

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		vity,	10			- 'p	Polarization	tion.		'Suj		J		
Number:	Manufacturer.	Specific Gray	Extract, g. p	Ash, g. per l	Total Acid, Citric.	io A elitalo Voisio.	Direct.	Invert.	Sucrose, g. p 100 c. c.	Immersion I frac. Read Sample.	Benzoste of Bods.	Salicylate of Soda.	Saccharin.	Color.
California 233 California 223 Crystal. 227 Orange Cider. 334 Orange Cider. 338 Orange Cider.	Klee & Cofeman, Indianapolis Pure Water Co., Berkly, Cal., Klee & Coleman, Indianapolis Klee & Coleman, Indianapolis Ann Bottling Works, Indpla Yunckle Bottling Works, Indpla Jacob Melger Co., Indianapolis	1.0540 1.0540 1.0540 1.0583 1.0439 1.0439	6.08 9.80 3.92 10.85	040 040 050 050 050 050 050 050 050 050	ಕಣ್ಣೆಕರ್ಷಜ್	289998 41998	++++136.0 4.28.4 28.24	0.0014478 0.0014478 0.00186	2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2	23.0 53.0 757.8 71.1	NNNNN	None Present None None	Present. None Present. Present. Present. None	Coal-tar dye Coal-tar dye Coal-tar dye (oal-tar dye Coal-tar dye

CIDERS-ILLEGAL.

						Aci	ds.	Acids. Polarization.	ation.		.19	001			190	196	
Number.	Brand.	Manufacturer.	Where Collected.	Sp. Gr.	Alcobol.	sa latoT silaM	Volatile as Acetic.	Direct.	Ipvert.	Per Cent. Sucrose.	emstailliM Jil 194 202	Extract per 0.0.	Salicylic Ac	Benzoic Acio	Saccharin. Asp, grams 1	Ash, grams 1 100 c. c. Alkalinity p 100 c. c. n/1 H Gl.	Remarks.
33	Extra Dry	Extra Dry Hirsch Bros., Louisville Indpls 1.0653 .21 .67	Indpls	1.0653	.21		120:	.021 -32.6 -33.8 14 13.20	-33.8	:	7	13.20	1	+	 	.331	Adulterated with
81	Duffy's	Duffy's American Fruit Produce Co., Rochester, N. Y Indels 1.0627 49 42 .030 -31.2 -31.0 14 12.70 -	Indpls	1.0527	-49	.42	8	-31.2	-31.0	:		12.70		+		285	
229		12 J. Metzger Co., Indpls 1.0450 14 .35 .003 +27.0 -14.0 8.08	Indpls	1.0450	7	8	8	+27.0	-14.0	8.08	:	12.20		<u> </u>	_: -	• !	Artificial.
	:	S. K. & I. C. Mott, New York City	ork City Indpls	1.0610	.14	8.	20.	1.0610 14 .90 .024 -34.0 -16.2 26 14.86	-16.2	i	8		+	<u> </u>	ا دن	.317	Adulterated with

LIME JUICES-LEGAL.

				:	Aci	ds.	Acids. Polarization.		.61	ms iter		_ 0		.ai	.0.0	ity) 0.0.	
Brand.	Manufacturer.	Where Collected.	Sp. Gr.	lodosiA	Citrio.	Acetio.	Direct.	JTOYaI.	Per Cen	stailliM I toq 208	Extract 100 o. c	Selicylic Acid.	Bensoic. Acid.	Sacchar	ava ,daA 001 req	Alkalin per 100 H HGL	Remarks.
se's brand ntserrat.	Hose's Brand W. A. Ross & Bro., Brand. India'polis	India'polis. India'polis.			5.40 8.40	280.	0.0			13		1 1	1 1	1.1			Pure.
Juice	C. C. Brandt & Co., San Diego, Cal. India' polis 8.13	India' polis.				.250	0.0	<u>:</u>		8			ı	ı	:		Pure.
		·		ME	Juic	I—SE	LIME JUICES-ILLEGAL.	AL.									
	S758 Rose L. Rose & Co., London, Eng. India' polis	India' polis.			8.	98.	0.0			<u>\$</u>	104 6.456	1	1	I	8.38		Adulterated with

GRAPE JUICES-LEGAL.

						Acid	:	Acids: Polarization.		0	800 (61			_	·a	.0.0	.0.0	
	Brand.	Menufacturer.	Where Collected.	.19 .qg	Alcohol.	oizatraT	Acetic.	Direct.	Invert.	Per Cent	is Tailli M il Toq 2 OS	Extra t p	Salicylic Acid.	Bensoic.	iradosa8	Ash, grain per 1000	Alkalinid per 100 d	Remarks.
14	Sobertson's	8599 Robertson's Layton Vinegar Co., Layton, Mich. India' polis. 1.0764 0.0 1.075 .11 -14.0 - 7.5 5.12 8.90	India' polis.	1.0764	0.0	1.075	.11	-14.0	- 7.5	:	5.12	8.80		ī		72		Pure.
: '		Co., Fremont, Ohio.	India'polis.	1.0726	5	8.	.012	-23.2	-20.7	:	0.18	20.46	1	ī	T	83	8	Pure.
				Ð.	IAPI	JUL 2	CES	GRAPE JUICES-ILLEGAL.	GAL.									
ر د	oncord		Huntington	1.0765	7.	Ę.	.012	-23.0	-23.2	:	_8	18.78	+	1	1	£.	8	Adulterated with
ر	S/35 CRIEWDS	Cincinnati, 0. India, polis. 1.0779 .28 1.70 .048 -26.0 -26.9	India'polis.	1.0779	88	1.70	88	0.88	83	:	\$	18.81	1	ı	1	8	8	Adulterated with
-	1270 P. B. Co.	Purity Bottling Co., Cincinnati, O. India'polis. 1.0668 42 .89 .114 -28.4 -27.9	India'polis.	1.0693	24.	88	11.	-28.4	6.72	:	28	16.70	ı	1		×	*	acid. Adulterated with
																		suippurons

ROOT BEERS-LEGAL.

• • •		•	_		Die die lon	5		•		venne.	d	01	α	P	P	_	
Laborato Lumbe Drand	Manufacturer.	Where Collected.	Sp.Gr.	Distil-		Alcohol.		Per Cent	Total as	Volatile 88 Acetic.		0.0	istailliM il teq cOS	oilvoilad ioA oiozaed	φ	i1adooa8	Remarks
444 Blanke's Tonic	C. F. Blanke & Co.,	;											8				
1975 Diag		washingt'n	:	:	0.7 - 8.4	۱ :	1	: >) o . I	/g.1	<u>8</u>		£	ı	<u>.</u> 1	<u>-</u> 	rare.
nines	THE CHASS. B	lalvern, Pa. India'polis. 1.0272 14.9, 42.1, 14 - 7.6 - 8.8 0.29, .12 7.903 060 10.24 -	1.0272	14.9	42.1	1	7.6	80.80	0.29	.13	7.903	8	0.24		<u>.</u>	<u></u>	Pure.
	I ne Cnas. II	India, polis	1.0771	0.0	0	0	2.0 -1	6.8	0.14	303	.303 20.02 .237:10.0	23.	0.0		<u> </u>	<u> </u>	Pure.
4280 Richelieu	Sprague, Wa	rner & Co., hicago, III India, polis. 1.0493 14.5 77.10.0 -14.6 -11.6 0.14 .38 14.28 .002 7.68	1.0493	14.5	77.10	7	4.6 -1	1.6	0.14	88	14.28	8	7.68	1		<u> </u>	Pure.

CARBONATED SOFT DRINKS.

Included under this title is a variety of products made by the use of various syrups and carbonated water. Some of them are plain sugar syrups flavored with lemon or vanilla. Others purport to be made from fruit syrups, such as strawberries, raspberries, etc. Still others sold as tonics contain various root extracts. While the composition of these drinks varies widely, yet one fact is very noticeable—nearly all of them contain large quantities of saccharin and very small quantities of cane sugar. No preservatives were present in any of the samples; indeed, the large amount of saccharin used obviated the necessity for sugar syrup and of itself assisted in arresting fermentation. The analyses of these samples are given in full for the purpose of supplying data concerning the much used summer drinks.

CARBONATED SOFT DRINKS.

			O.	.a.m.	.o.			olds,	Pola tic	Polarisa- tion.	.80	Immers'n Refract.	act.	д	Preservatives		
rotatotaJ redmuN	Brand.	Manufacturer.	D officed B	Alcohol, g per 100 c	Extract, g	Ash, gms. 100 c. c.	Total Acid	Volatile A	Direct.	Invert.	8 , es o 7e u8 .e 001 Teq	Sem ple.	Litald atal	Bensoate abod to	etalvoilad abod to	-adooa8 rin.	Color.
	No label	lee & Colemanapolis	1.0362	6	154	.043	.13	90:	0.0	0.0	0.0	85.5	1	None.	None	Present.	
022 4230	No label		1.0498	.07	2.67	88	8	810.	+11.6	- 3.5	3.00	12.1	1	None.	None	None	
	Rearhorn	Ireland Klee & Colemen Indi	1.0000	8	St.	88	\$	8	0.0	0.0	0.0	14.9	i	None.	None	None.	
	Lemon Sode	anapolis, Works	1.0106	8	2.87	020	7.	80.	+ 6.2	- 3.5	1 44	24.4	1	None.	None	Present.	Coal tar Dye.
337		Indianapolis. uncker Bros., Ind'pls uncker Bros., Ind'pls	1.0398	282	2.538 10.96 9.739	7222	4 ==	888	+++ 88.83 0.4.8	- 2.6 11.3 - 9.7	640.00 0.00	28.83 2004	14.9	None.	None. Present. None	Present. None	
	: :	Yuncker Bros., Ind'pls Klee & Coleman	1.0101		25 25 25 25 25 25 25 25 25 25 25 25 25 2	<u>8</u> 8	* 2.		- 0.0	-11.3 - 2.6	8.0 8.0	824 640	1 %	None.	None	None	Coal-tar Dye.
	Pop Pop Pop	Indianapolis. J. Metzger, Ind' pls. J. Metzger, Ind' pls. J. Metzger, Ind' pls.	1.0230 1.0230 1.0226	8482	2.435 2.412 6.206 5.997	26.95.95 27.98.95	ន់ដង់ង	9588	++++ 20.4.4.6		24.00 25.00	8882 4000	\$ 1 2 2 8 1 8 6	None None None	NNN on on on on on on	Present. Present Present. Present.	Coal-tar Dye. Caramel.
4361	: :	anapolis. J. Metzger, Ind pla	1.0131	7.7.	5.786	6 86.	58	88	+ 3.6	_ 2.6 _ 5.7	4.5	27.0 35.0	15.0	None.	None	Present.	Coal-tar Dye.
	Sarsaparilla Pop.		1.0276	Ş	6.490	8 6	.12	8	+ 2.8	+ 0.8	7 .0	42.3	I	None.	None	Present.	
1234	Sarsaparilla Pop.	Indianapolis. Klee & Coleman	1.0108	7. 8	2.817	88	5		∞	1	3.0	83.0		None.		Present.	Caramel.
	Iron Brew	Aquos Water Co., Indi- anapolia	1.0090	នុ ត	2 E	8 8 8	ä 8	8 8	+ +	1 I	1.5	23. 23 24. 24.	0.0 1	None:	None	Present.	
 §	Fruit Malt	Co. New York	1.3050	8:	18.81		1.43	5	+61.6		-61.48 14.68	97.6	16.5	None.	None	Present.	

17.

VINEGARS.

Cider.—It has many times been asserted by those engaged in enforcing pure food laws that vinegars are subject to adulteration to an extent perhaps greater than is the case with any other article of food.

Analyses of samples of vinegar collected from every part of Indiana offer good evidence, that, in this State, at least, the statement is not overdrawn.

Two hundred and thirty-nine samples of cider vinegar were analyzed and 187 were found to be adulterated.

Of adulterated samples 157 were artificial and 30 were below the standard required for cider vinegars, in acidity or solids, or both.

The striking fact to be noticed in the summary of results is that nearly 80 per cent. of the vinegars examined were adulterated, a finding which is remarkable in view of the fact that our State is well able to make every gallon of vinegar consumed within it. The home product is displaced by the artificial, acetic acid solution, colored with caramel, to the loss of the farmer or local manufacturer, and the defrauding of the consumer who pays cider vinegar prices for a cheap, spurious product, lacking all the peculiar aroma and delicate flavor which has given cider vinegar its reputation.

When the standard of acidity and solids is fixed all vinegars which do not come up to the standard are adulterated, and the manufacturer or dealer in such an article is liable for violation of the pure food laws. The practice of saving the first pressing from apple pomace for cider and then wetting down the exhausted cheese with water before a second pressing produces a diluted cider which is low in solids and malic acid and which will never make good vinegar. Imperfect acetification is regularly met with. In such cases the vinegar has not been sufficiently aged or has been kept out of access to air. The oxidation of alcohol to acetic acid can only take place in the presence of a liberal supply of oxygen, and vinegar makers should not expect that cider put into a cool cellar in unvented barrels will make vinegar.

The quality of a vinegar is sometimes injured by an abnormal fermentation or the development of moulds, or by the presence of

vinegar eels (Anguillula Oxophila). Foreign substances are occasionally accidentally introduced into vinegar which injure its color or render it injurious to health. The common practice of using as a funnel a wooden bucket with a lead tube or of employing a lead spigot, leads to the formation of sugar of lead (lead acetate), which is an active poison.

The manufacturers of artificial vinegars are all located outside the State where we have been unable to reach them except by correspondence. The business methods of some of these firms are nefarious, and the opportunity that will be given us under the new Federal law for keeping products of such firms off our markets, will afford us a welcome relief. One firm in particular, the "Red Cross Cider & Vinegar Co.," of St. Louis, has been a persistent violator of the law. Their method has been to send a salesman through the state offering to sell a quantity of cider vinegar at a price somewhat below the market price, and to throw in one barrel with every six purchased. A guarantee of purity is pasted on every barrel which covers the entire head and reads thus:

"NOTICE.

We will forfeit \$100.00 for every barrel of vinegar bearing this certificate that is not the product of pure apple juice. This vinegar is pure, fermented apple juice and is warranted to more than fill the requirements of the pure food laws.

The Red Cross Vinegar Co."

This guarantee and the strong assertion of the salesman has convinced many dealers that their goods were genuine. In fact in some instances the first few barrels shipped have been pure, although the last consignment was invariably a fictitious article. These artificial vinegars, while formerly simply colored distilled vinegar, are now very skillfully made; the dealers, starting with a distilled stock, add apple solids, salts of potash, malic acid, phosphoric acid, or some other substance that produces a heavy precipitation with lead acetate; sugars, colors and flavoring essences, until their blend not only resembles cider vinegar in appearance and flavor, but has most of its chemical characteristics. It is impossible for the honest manufacturer or dealer in cider vinegar to compete with these spurious articles.

CIDER VINEGAR-LEGAL.

Leboratory Number.	Brand.	Manufacturer or Retailer.	Where Collected.	Acidity as Acidid.	Solids.	Ash.	Alkalinity of Ash.	Polarization	Lead Acetate. Precipitate.	Color.
4010 4130 4130 4130 4130 4130 4130 4130	Cider Vinegar Pure Cider	Red Cross Vinegar Co., St. Louie Kothe, Wella & Baner, Indianapolis A. H. Perfect & Co., Ft. Wayne Red Cross Vinegar Co., St. Louis Red Cross Vinegar Co., St. Louis Red Cross Vinegar Co., St. Louis Red Cross Vinegar Co., St. Louis Price & Lucas, Louisville Red Muella & Baner, Indianapolis Go. Blue, Indianapolis Go. Bureley & Co., Ft. Wayne Heira, Pittbourch J. H. & B. Amt Co., Indianapolis J. H. & B. Amt Co., Indianapolis Go. Bulliams Bros. Co., Indianapolis J. H. & B. Amt Co., Indianapolis Go. Phillips Co., Chicago H. J. Heira Bros. Louisville G. E. Biraley, Ft. Wayne G. E. Biraley, Ft. Wayne Albion Cider & Vinegar Co., Albion N. Y A. Brown & Co., Pittsburgh G. B. Breinz & Co., Pittsburgh H. J. Heinz & Co., Pittsburgh H. J. Heinz & Co., Pittsburgh Schnull & Co., Indianapolis	Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Ft. Wayne Indianapolis Indianapolis Indianapolis Rartinaville Indianapolis Rartinaville Indianapolis Indianapolis Frank lin Anderson Muncie Muncie Evansville Byansville Boonville Jeffersonville Jeffersonville	6-44-44-44-44-44-44-44-44-44-44-44-44-44	41444444444444444444444444444444444444	######################################	8558828085288228824668828	+ + + + + + + + + + + + + + + + + + +	Normal. Normal. V. Sil. V.	NNOTE BE STORY OF THE STORY OF

An abnormal vinegar. ¿Low in solids. †Tarragon binegar.

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Laboratory Mumber.	Brand.	Manufacturer.	Where Collected.	Acidity as	.abilo8	Asb.	Alkalinity of Ash.	Polarization.	esal A basel estaliqicarq	Color.	Remarks.
4858 4871 4871 4871 4871 4871 4871 4871 487	Odder Rowe-Ba Rowe-Ba Coder	Kotbe, Wells & Bauer. C. H. Kinne, Indianapolis Kethe, Wells & Bauer. Cruikshank, Alleghany. Pe Firste Bross. Lousville. Sprague-Warner Co. Amt & Co., Indianapolis. A. H. Perfect & Co. A. H. Perfect & Co. And Like, Mulberry. John Like, Mulberry. Cruck & MecConnell, Toledo, Ohio Reid, Murdoek & Co., Chicago. Reid, Murdoek & Co., Chicago. National Grocery, South Bend. King Coffee Co. King Coffee Co.	Indianapolis Indianapolis Indianapolis Kuightstown Indianapolis Indianapolis It dianapolis It dianapolis It dianapolis It dianapolis It dianapolis It wayne Indianapolis It wayne Indianapolis It wayne Indianapolis It wayne I of the It dianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis	£4%6%88%82482%8£4%8882%	25.55 25.55	92552888434988449888888888888888888888888888			Heavy. He	HERENES ESTATEMENTS OF THE PROPERTY OF THE PRO	

CIDER VINEGAR-ILLEGAL.

Golumbus Columbus	Leboratory Number.	Brand.	Menufacturer.	Where Collected.	Acidity as Acid.	.abilo8	.dsA.	Alkalinity of Asb.	. поізагіта Год	Precipitate with Lead Acctate.	Color.
Hirsch Bros. & Co., Louisville		Guaranteed Table Vinegar. Gold Seel.		Columbus Franklin Franklin	48.48	.343 .156 .186		5	+++ + 2,1 6,1;2,4	None	A A A A
Accepted Notice Accepted Ac		Salad Cider Old Kentucky Pure Apple Cider	• •	Elwood Alexandria	344	12 2 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		8 3	+	Heavy None Mod	;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
Heart More Annual Conference		Pure Apple Cider Pure Apple Cider	Appendix A	Alexandria Muncie	283	11.0	ទិនីន	279	+ + 	Mod	
Price & Lucas, Louisville Brazil 3.61 (635 145 10 10 10 10 10 10 10 1		Fure Apple Clust Gider Vinegar Pure Apple Cider		Muncie. Brazil	* 00 00 00 00 00 00 00 00 00 00 00 00 00	388	i Sesi		++	None None	
Jos. Strong & Co.* * Pure Cider Pure Bante Coffee & Spice Confee Brazil S. 78 388 1389 178 14 + 2.1 Heavy Britan Pure Bante 2.78 316		Homestead Old Homestead		Brazil Brazil	÷ % ;	÷98	188	2	900	None	NO S
Picking Hirsch Bros. Louisville Levis Haute 1.34 386 369 4.15 None 1.2 Mone 1.2 Mone 1.2 Mone 1.2 Mone 1.3 Mone		Jos. Strong & Co. s Pure Cider Hirsch's Fox.	Hirsch Bros. & Co., Louisville	Brazil Brazil	လ လ ဝ	200	£55	z	++-	Heavy	
Clebratic Cleb		Pickling	Hirsch Bros., Louisville	Terre Haute	2.5	88	188		+++		
Greens Supply Co. Indianapolis Martineville 4.12 350 0077 + 4.8 None		CiderFamily Cider	J. C. Perry, Indianapolis. Louisville Cider & Vinegar Co	Martinsville		85	<u> </u>		++		00 ≱ ≱
Louisville Cider & Vinegar Co. Vineannes S.61 Mone 1.2 None 1.2 Non		Pure Pickling.	Grocers' Supply Co, Indianapolis. Louisville Cider & Vinegar Co	Martinsville		33	28		++		00 ≱≱
Total & Co., Vincennes		Cider Vinegar.	Louisville Cider & Vinegar Co Jno. Bey, Vincennes	Terre Haute		84	<u> </u>		++		ပ်ပ ≱≱
Juo. N. Bey, Vincennes Vincennes S. S. S. S. S. S. S. S. S. S. None Juo. N. Bey, Vincennes S. S. S. S. S. S. S. S. S. S. S. S. S.		Cider Vineger.	Jno. N. Bey, Vincennes	Vincennes	3.5 3.5	ង្គង			++	None None	င်္ပ
Vincennes Vinc		Pure Cider Vinegar		Vincepnes	80 80 80 70	2 8		2	+ + & & &		SI.C. WC
Hirsch Bros. Louisville 18 Non		Pure Apple Cider Vinegar		Vincennes	బ్ల జి	8	88		++ બુજ		0
		Pickling Pure Apple Gider Pure Apple Gider	Hirsch Bros. Louisville	Vincennes Vincennes	8 8 8	8	388	<u> </u>	+++ & & C		000 88€

*Colored with caramel.

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Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Acidity as Acetio Acid.	Solids.	.daA	Alkalinity of Ash.	Polarization.	Precipitate with Lead Acetate.	Color.
₹	Cider Vinegar	J. D. Todd, Vincennes.	Vincennes	20.8	\$35	38		++ &&	None	S. S. S. S. S. S. S. S. S. S. S. S. S. S
128	Pickling Old Kentucky (colored)	Hirsch Bros., Louisville.	Vincennes	48	88	8.3		++	Sl. tur	©
34	Pure Apple Cider	C. Bierhaus & Sons, Vincennes.	Washington	86.98	1.780	88	8	- 1 9		Not col
33	Steuben Co.	Sprague, Warner & Co., Chicago.	Washington	8.9 8.8	1.768	85	ౙ	1.9		Not col
300	Golden Dowlle Dram Ciden	Hulman & Co., Terre Haute	Washington	8.00 8.00 8.00 8.00 8.00 8.00 8.00 8.00	8.5	589		++		
425	Red Cross		Washington	500	ន			+		© }
1137	Blue Grass Belle	Jones Bros. & Co., Louisville Rocknort Vinegar Co., Rocknort	Oakland City.	25	250		91	++	_	Sot sol.
98	Maiden Blush		Oakland City	3.58	12.0	8		+-	None	≱ 8
88	Pure Apple	Parson & Scoville, Evansville	Princeton	3.5.	2.498	3,5	12			Not Col.
1210	Apple Cider	Ragon Bros. Evansville	Princeton	8.45 6.65	58.5		8	+ [ပ် ≱`န
12	Cushing Best	C. C. Cushing, St. Louis	Mt. Vernon	5.53	215		3	+ 300		▼. O.
274	C. C. Cushing	St. Louis Vinegar Co., St. Louis	Mt. Vernon	8.5	218		:	:		¥¥
38	Fure Cider	Hirsch Bros., Louisville	Evansville	.8				-2.0		Not Col.
88	Pickling	Hirach Bros Louisville	Evansville	3.2	25.55 52.55 53.55	85	:	-1.0	:	Not Col
8	Cider	Hirsch Bros., Louisville	Evansville	89	281			+	: :	C.W.C
14	Claer and Vinegar	Dowe & Shell, Toledo	Huntington	286	8	38	77	0.1+	Heary	ار ان ان ا
456	Pure Cider	W. M. Hoyt, Chicago	Huntington	2.10	88.	Si Si	88	Č		Not Col
4	Hoosier	Lewis Seitz Gro, Co., Evansville	Booneville	180	32	3.8	8 :	+1.2		C. W. C.
85	Old Home	Lewis Seitz Gro. Co., Evansville Wm. Fishback, Evansvilla	Booneville.	88	2.5 2.5 2.5 2.5 2.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3	នុខ	22	00	$\overline{}$	Sot Co.
515	Cider.	Hirsch Bros., Louisville	Hantingburg	3.4	85.5 85.5 85.5 85.5 85.5 85.5 85.5 85.5					× 4
38	Pure Cider	Hirsch Bros. Louisville	Jeffersonville	2.5	E			-	: :	
28	Pickling	A. Kabn, Louisville	Jeffersonville.	36	88	 58	 :::	0.0	None	

#####################################	: : : : : : : : : : : : : : : : : : :	00000000000000000000000000000000000000	Caramel	Caramel Caramel Caramel Caramel Caramel Caramel Caramel Caramel Caramel
NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN	NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN	Heavy None Nore Sight. None None None None Meavy Very Si.	Sl. tur- bidity. Faint	bidity None. Heavy None. Heavy Heavy Very slight.
+ +++ +++ o : : : : : : : : : : : : : : : : : : :	+++ <u> </u> +++++ +	++++ + + + +	-2.0	1.6+ + 0.00 + + 8. + 6.
•	<u>: : : : : : : : : : : : : : : : : : : </u>	8 2 2 58	.0	32. 6. 16.
			8. 8.	
		2	3 .868 3 1.57	**************************************
0.40000244040 999923422449		& & & & & & & & & & & & & & & & & & &	3.88	4.000.400.400. 4.100.400.400. 4.100.400.400.
Jeffersonville Jeffersonville Jeffersonville Jeffersonville Joffer	Kokomo Kokomo Kokomo Ft. Wayne Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis	W. Ind'spolis Indianspolis Indianspolis Indianspolis Indianspolis Bloomington Bloomington Jeffersonville Fort Wayne	Indianapolis Fort Wayne	Tipton Indianapolis Indianapolis Muncie Thorntown Indianapolis Tipton
S. K. & J. C. Mott. Bouckville, N. Y. Hirech Bros. Louisville A. Kahn, Jeffersonville Hirech Bros. Louisville Hirech Bros. Louisville Price & Loues C. V. Co., Louisville Price & Loues C. V. Co., Louisville Knabler & Loues Louisville Knabler & Loues Louisville W. D. Huffman, Indianapolis Hirech Bros. Louisville	- Esta Maser	Lacota C. & V. Co., Lacota, Mich. Miles Chem. Co., Indianapolis Crescent Preserve Co., Indianapolis Thatcher-Keller Co., Indianapolis W. D. Huffman Co., Indianapolis Terre Haute Coffee & Spice Mills. W. D. Huffman, Indianapolis Red Cress Vinegar Co., St. Louis M. Kahn & Co., Louisville	Price & Lucas, Louisville, Ky	N. Y. Cider Co., St. Louis Red Cross Vinegar Co., St. Louis Red Cross Vinegar Co., St. Louis N. Y. Cider and Vinegar Co., St. Louis Red Cross Vinegar Co., St. Louis N. Y. Cider and Vinegar Co., St. Louis
Gider Plokling Apple Pickling Pickling Cider Cid	Apple Generate Co-Cider Table Apple Pure Table Pure Table Pure Table Pure Table Pure Table Pure Table	Luxury Acme Jos Strong & Co.'s Pure Cider Cider Cider Cider	Sterilized Cider	Cider Cider Madison Co. Cider Pure Apple Cider Pure Cider Pure Cider
5555 5555 5556 556 556 556 556 556	222222 88	25.55 25.55	4099	1152 1200 1200 1200 1260 1260 1260 1260

CIDER VINEGAR-ILLEGAL-Continued.

Cider Pure Cider Pure Cider Pure Cider Pure Cider Pure Cider Pure Cider Red Cross Vinegar Go., St. Louis Cider Cider No. 1 No. 1 No. 1 No. 1 No. 1 Pure Cider Pure Cider

† Vinegar eels present.

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.bioAo.	Manufacturer. Where Collected. Manufacturer. Collected. Solidar. Acab. Solidar. Acab. Solidar. Acab. Solidar. Acab. Color. Remarks.	Jider Price & Lucas, Louisville, Ky. Indianapolis 4.51 1.57 078 82.8 Slight Caramel Jider Red Cross Vinegar Co., St. Louis Nobleaville 3.5 20 020 - +1.0 Night Gramel	Red Cross Vinegar Co., St. Louis Fransville 4.20 2.38 2.31 +3.4 V.slight Caramel	0.44. 0.00 986 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	J. H. & B. Amt, Indianapolis Indianapolis 3.90 3.163 338 281.8 Heavy Caramel	Cider. Groers Supply Co., Indianapolis Indianapolis 4.90 2.576 .282 36. +4.4 Heavy Caramel Not genuine. Cider. Red Cross Cider & Vin. Co., St. Louis. Indianapolis 4.74 1.180 .099 - 1.2 None. Caramel Artificial. Indianapolis 4.75 1.180 .099 - 1.2 None. Caramel Adulterated. Louis Lou	Huffman, Indianapolis [Indianapolis 4.09 0.234 023 - + 4 None Caramel Amt & Co., Indianapolis Indianapolis 3.89 2.004 034 30 -1.0 Heavy. Normal	H. Gibson, Knightstown Knightetown 1.97 0.994 .222 16. +-0.0 Slight Normal. Be	Price & Lucas, Louisville. Knightstown 3.62 0.239 .031 - +1.0	Price & Lucus Louisville	Price & Lucas, Louisville Todianapolis 4.68 5.767 150 123.6 Sight Normal. Price & Lucas, Louisville Columbus 4.00 0.643 188 10. +1.0 Heavy. Normal	Red Cross Greef and Vin. Co., St. Louis Indianapolis Red Cross Cider and Vin. Co., St. Louis Anderson Essax Co. Areadia	Red Cross Cider and Vin. Co., St. Louis Marion 3.50 0.260 .021 - + 4 None. Caramel Red Cross Cider and Vin. Co., St. Louis Indianapolis.	
	Brand.	Pure Cider Pure Cider	Pure Cider	Fure Cider	Pure Cider	Pure Cider	Pickle Cider Pickle Cider	Pickle Cider	Homestead	Cider Pure Cider Bayles Cider	Old Homestead	Red Cross	Red Cross Pure Cider	Pure Cider

CIDER VINEGAR-ILLEGAL-Continued.

† Vinegar cels present.

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	Remarks.	Artificial. Artificial. Artificial. Not normal	Vibegar. Artificial.	Signuy below geagon. Not genuine. Artificial. Adulterated.	Arriffoial. Artiffoial. Slightly below	standard, Pure. Below standard	Fure. Artificial. Artificial. Artificial. Artificial. Artificial.	Artificial. Below standard Artificial. Artificial. Artificial. Artificial. Low in acidity.
-	Color.	Caramel Caramel Caramel Caramel		Caramel N Caramel A Caramel A	- 102	Normal. I	Caramel Caramel Caramel Caramel Caramel Normal. Normal. Caramel Caramel Caramel Caramel Caramel Caramel Caramel Caramel Caramel	
etate Gasti	Lead Ac	Slight Visight Visight Visight	 -	Heavy.	: ::	Slight	None None None None Night	None. None. None. Heavy.
.aoit	8zizslo9	1++++ 21:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0	+1.0	4.1.	· +1	+-0.0	+ + + + + + + + + + + + + + + + + + + +	+ + + + + + + + + + + + + + + + + + +
£1	iailsalla daa to	∞,111 2 ;	1 8	લું ક્ષ્ટું)	18	18.	11111622	188111111111111111111111111111111111111
	.daA	88322R	780.	8 888	88	22.	25.00 5.00 5.00 5.00 5.00 5.00 5.00 5.00	
	Solids.	1.57 1.22 1.23 1.23 1.23 1.23 1.23 1.23 1.23	.261	2.576 0.261 1.150	200.	0.99	0.239 0.135 0.234 0.187 5.016 5.767 0.318	
se.	ttibis∆ si300A	4.8.8.4.6 12.88.9.8.		8. 2.4.4		1.97	25.86.96.75.86.088	
- se	Where Collected.	Indianapolis Noblesville Portland Evansville Indianapolis	Indianapolis	Indianapolis Indianapolis Indianapolis Indianapolis	Indianapolis Indianapolis	Knightstown	Knightstown Knightstown Knightstown Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis	Anderson Noblesville Marion Indianapolis Indianapolis Indianapolis Ft. Wayne
	Manufacturer.	Price & Lugas, Louisville, Ky. Red Cross Vinegar Co., St. Louis Red Cross Vinegar Co., St. Louis	:		Huffman, Indianapolis Amt & Co., Indianapolis	H. Gibson, Knightstown	Price & Lucas, Louisville. Price & Lucas, Louisville Price & Lucas, Louisville Vaugin & Casey, Crawfordsville Geo. A Bayle, & Louisville Price & Lucas, Louisville Price & Lucas, Louisville Red Cross Gider and Vin. Co. St. Louis	Red Cress Cider and Vin. Co., St. Louis Bereax Co., Areadia Red Cross Cider and Vin. Co., St. Louis Red Cross Cider and Vin. Co., St. Louis Red Cross Cider and Vin. Co., St. Louis A. H. Perfect & Co., Ft. Wayne.
:	Brand.	Pure Cider Pure Cider Pure Cider	Pure Cider	Pure Cider Pure Cider Fure Cider Karl	Pickle Cider	Pickle Cider	Homestead Old Homestead Gider Pure Tider Bayles Cider Old Homestead	Red Cross Cider Red Cross Pure Gider Pure Gider Gider
017 51.	danda.I	45.45 45.45 47.04 47.04	4852	4865 4865 4873	49.38 4943	4962	4964 4966 4970 5014 5013 5014 5166 5229	5294 5674 5731 5760 5761 5889

CIDER VINEGAR-ILLEGAL-Continued.

Brand.	Manufacturer.	Where Collected.	Acidity as Acetic Acid.	Solids.	.dsA	Alkalinity of Ash.	Polarization.	Precipitate With Lead Acetate.	Color.
Cider Pure Cider Apple Apple Cider Cider H. Tank, No. 1 No. 7 No. 7 Pure Cider Pure Cider	Cider. Pure Cider Pure Cider Pure Cider Pure Cider Pure Cider Red Cross Vinegar Go., St. Louis Cider No. 1 No. 1 No. 1 Pure Cider Pure Cider Pure Cider Pure Cider Pure Cider	North Salem Indianapolis Budfon Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Union City	84868347958	842223233	gatistics;	2002 1656 1656 1657 1650 1650 1650 1650 1650 1650 1650 1650	++++++++++ & 4 & 0 0 0 0 0 0 4 4 0	Mede Mede None None None	Caramel Caramel Normal Caramel Caramel Caramel Normal Caramel Caramel Caramel

†Vinegar eels present.

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Remarks.	Artificial. Artificial. Artificial. Not normal	vinegar. Artificial.	Signer verow Reason. Not genuine. Artificial. Adulteraled. Below tandard	Artificial. Artificial. Slightly below	standard. Pure. Below standard		Artificial. Artificial. Artificial. Below standard Artificial.	Artificial. Artificial. Artificial. Low in scidity.
Color.	Caramel Caramel Caramel Caramel Normal	Caramel		Caramel Normal.	Normal.	Caramel Caramel Caramel Caramel Caramel	Normal. Normal. Caramel Normal. Caramel	Caramel Caramel Caramel Normal.
Lead Acetate. Precipitate.	Slight Slight V.slight V.slight Ileavy	None	None None None	None	Slight	None None None Slight	Heavy. Night. None. Heavy.	None. Heavy.
. aoitazitalo¶	1++++	+1.0	4+1+	+10.14	+- 0.0	+++++	1+++ 1	11 ⁺ .1 8.0.
Alkalinity of Ash.	æ 14	1 8	કે સ્ટ્રાં!	18	16.	ا ۱۱۱۱م	12:18:11	1118
.daA	88992¢	780.	8899	88	223	\$20 \$20 \$20 \$20 \$20 \$20 \$20 \$20 \$20 \$20	88.888	600.
Solids.	15. 25.25 599	261	2.576 0.261 1.150	2.00	166.0	0.239 0.135 0.287 0.187 5.016	25.00 25.00	0.175
Acidity as Acid.	**************************************	88. 6	8 6646	4.8 8.90	1.97	8.4.88.4.6 8.08.08.0 8.08.08.0		
Where Collec te d.	Indianapolis Noblesville Portland Evansville Indianapolis	Indianapolis	Indianapolis Indianapolis Indianapolis Indianapolis	Indianapolis Indianapolis	Knightstown	Knightstown Knightstown Knightstown Indianapolis Crawfordsville.	Indianapolis Columbus Indianapolis Anderson Noblesville Marion	Indianapolis Indianapolis Ft. Wayne Ft. Wayne
Manufacturer.	Price & Lucas, Louisville, Ky Red Cross Vinegar Co., St. Louis Red Cross Vinegar Co., St. Louis	I U & D Amt Indianable	Groers' Supply Co., Indianapolis Red Cross Cuer & Vin. Co., St. Louis Faulkner & Co., Indianapolis Prince & Lucas, Louisville	Huffman, Indianapolis Amt & Co., Indianapolis.	H. Gibson, Knightstown	Price & Lucas, Louisville Price & Lucas, Louisville Price & Lucas, Louisville Vaughn & Casey, Chawfordsville Geo. A Bayle, St. Louis	Price & Lucas, Louisville Price & Lucas, Louisville Red Cross Cider and Vin. Co., St. Louis Escas Co., Streadis Escas Co., Streadis Red Cross Cider and Vin. Co., St. Louis	Red Cross Cider and Vin. Co., St. Louis A H. Perfect & Co., Ft. Wayne Williams Bros, Detroit
Brand.	Pure Cider Pure Cider Pure Cider	Pure Cider	Pure Cider Pure Cider Pure Cider Kentucky Belle	Pickle Cider	Pickle Cider	Homestead Old Homestead Cider Pure Cider Bayles Cider	Old Homestead Pure Cider Red Cross Cider Red Cross	Pure Cider Pure Cider Cider Cider
Laboratory.	4576 4540 4561 4704	4852	4865 4869 4873 4937	4938 4943	4962	4964 4966 4970 5014 5043	5229 5229 5239 5731 5731	5760 5761 5889 5897

VINEGAR-ILLEGAL-Continued.

Remarks.	Artificial. Artificial. Below standard Below standard Below standard Below standard Below standard Below standard Below standard Artificial.
Color.	Caramel Normal
Lead Acetate Precipitate	None None
Polarization.	++++++++++++++++++++++++++++++++++++++
Alkalinity of Ash.	
.dsA	98 88 88 88 98 99 99 99 99 99 99 99 99 9
Solids.	0.250 0.250 1.157 1.157 1.157 1.157 1.157 1.157 1.159 1.159 1.159 1.159 1.150 1.
sa vitibis A bish sites A	4000-040044 4 4400494400446 Subirsecitifi
Where Collected.	Ft. Wayne Ft. Wayne Noblesville Gosben Gosben Gosben South Bend Madison Madison Brasil Brasil Brasil Terre Haute T
Manufacturer.	Mollinger Bros. Ft. Wayne Dun & Co., St. Louis Price & Lucus, Louisville Dr. Wn. Hees, Goshen W. J. Quan & Co., Chleage South Bend Grocery Co., South Bend J. Ones Bro. & Co., Louisville Louisville Cider and Vinegar Co. Bement-Res Co., Terre Haute Bement-Res Co., Terre Haute Robinson Cider and Vinegar Co., St. Louis Rathor, Mich Harbor, Mich Rod Cross Cider And Vin. Co., St. Louis Rod Cross Cider and Vin. Co., St. Louis Rod Cross Cider Laporte Roffman, Indianapolis Roy Cider Co., Chicago Hoffman, Rodinapolis Roy Cider Co., St. Louis Roy Hore, Plymouth Bauer-Marlean Co., Toledo, Ohio Price & Lucas, Louisville Buth Heiver, Plymouth Bauer-Marlean Co., Toledo, Ohio Price & Lucas, Louisville W. F. Law, Chicago
Brand.	Cider Cider Old Homestand Cider Cider Cider Cider Cider Batra Family Cider Genuine Older, Guaran- teed Cider
Laboratory Tedmu N	5916 5916 5910 6019 6019 6019 6019 6019 6019 6019 6

MALT VINEGAR.

The practice of selling colored distilled or spirit vinegar for a malt vinegar is very common. A charitable explanation of this violation of the law is that long continued trade in the imitation product has in a way fixed the name of "Malt" on the colored distilled vinegar, although it should be applied only to nondistilled goods made by the alcoholic and acetous fermentation of grain infusions.

Of the 20 samples of malt vinegar examined, but four were genuine malt vinegar, the rest were simply colored distilled vinegars.

Violatory Tadmu	Brand.	Me	Manufacturer.		S P O	Where Collected.		sa vibi cotic Acid.	· .abi	lo yinilas Jo yinilas Jo yinilas	. noilszira	elalad Acetate.	,8×18m
N Train								V V		V (1V	lo q	rea T	Reı
141 1475 1475 1475	Colored Malt Malt colored) Pure Distilled (colored) Family Malt Vinegar Malt Distilled Malt Pure Cereal Malt Malt Malt Malt Malt Malt	Wm. H. Bunge, Chicago Hirsh Bras, Louisville Schrull & Co. Louisville Louisville & Co. Indianapolis Brinkmeyer, Kulm & Co. Indianapolis Brinkmeyer, Wincemes Ant Bros, Indianapolis Hirsh Bros, Louisville Fishback Evansville W. D. Huffman, Indianapolis	rille. Danapolis. A Co., India. R Co., India. R Co., India. R Co., India.	Indaaapolis		Brazil Terre Haute Marinavile Vincennes Vincennes Vincennes Princeton Princeton Bransville Evansville Bonnville		2.94 + 2.22 2.94 + 2.22 3.64 + 2.22 3.64 + 2.23 3.64 +	222 252 252 253 253 253 253 253 253 253	0.043 0.027 0.027 0.055 0.055 0.055	++++++ +++ 0.4:1.6:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0	None None None None Strone Strone Heavy	**************************************
•	*Colored with caramel.		MAL	MALT VINEGAR-LEGAL	EGAL								
Laboratory Mumber.	Brand.	Manufacturer.		Where Collected.	Acidity as Acetic Acid.	Solids.	.dsA	Alkalinity of Asb.	Polarization.	Lead Acetate Precipitate.	Color.	Веш	Remarks.
4934 4940 4988	Malt Fermented Malt	Heins, Pittsburgh Schnull & Co., Indianapolis Sprague, Warner & Co		Indianapolis Indianapolis Indianapolis	5.82 5.70 6.13	2.050 3.521 1.887	.200 .177 .143	344	+ 76	Heavy. Heavy.	Normal Normal Normal	Pure. Pure.	
			MALT	MALT VINEGAR-ILLEGAL	LEGA	ان							
4860 4874 5012 5239	Malt Malt Malt Malt (Colored)	Miles Ch. mical Co., Indianapolis Faulkner & Co., Indianapolis Grocere Sapply Co., Indianapolis Huffman, Indianapolis Best & Sons, Muncie	napolis olis napolis	Indianapolis Indianapolis Indianapolis Muncie	8.6.4.8.4 20.4.8.1. 20.7.88.1.	3.163 0.272 0.200 0.213 0.30n	88888	11111	++++ 0.0.4.0.	NNO DE CO	Caramel Caramel Caramel Caramel	- 11	Notamaltvin'r Artificial. Artificial. Artificial.

MALT VINEGAR-ILLEGAL.

GRAIN VINEGAR.

Grain vinegar is uncolored distilled vinegar. Ten of the 15 grain vinegars analyzed were illegal, either because of the addition of caramel color or an acidity below the 4 per cent standard.

GRAIN VINEGARS-LEGAL.

Romerks.	Prop'y labeled. I Prop'y labeled. I Prop'y labeled. Legal.
Color.	Caramel Caramel Caramel None
Lead Acetate Precipitate.	None None None None
Polarization.	+++++ 20004
Alkalinity of Ash.	11111
.dsA	.017 .021 .034 .000 .000
Solids.	0.243 0.240 none
Acidity as Acetic Acid,	6444 64838
Where Collected.	Brasil Brasil Greencastle Brasil
Manufacturer.	Hulman & Co., Terre Haute Schnull & Co., Indianapolis Bunge & Co., Chicago. Atwood, Steele & Co., Chicago.
Brand.	red Distilled red Distilled o White Distilled ite Wine
	Roy Colo Colo Whi

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W. D. Huffman, Indianapolis S. S. S. 220 025 + .6 None
Indianapolis 3.32 220 0.028 + 3.4 Washington 3.57 919 0.055 + 3.1 Oakland City 3.59 1.070 0.48 + 2.1 Princeton 3.76 275 0.05 + 4.2 Princeton 3.83 2.43 0.046 + 4.4 Mt. Vernon 3.07 2.00 0.046 + 4.4 Ht. vernon 3.07 2.00 0.025 + 4.4 Ht. vernon 3.00 0.025 + 4.4 Ht. vernon 4.00 0.025 + 4.4 Ht. vernon 4.00 0.025 + 4.4 Ht. vernon 4.00 0.025 + 4.4 Ht
Indianapolis 3.32 220 0.028 + 3.4 Washington 3.57 919 0.055 + 3.1 Oakland City 3.59 1.070 0.48 + 2.1 Princeton 3.76 275 0.05 + 4.2 Princeton 3.83 2.43 0.046 + 4.4 Mt. Vernon 3.07 2.00 0.046 + 4.4 Ht. vernon 3.07 2.00 0.025 + 4.4 Ht. vernon 3.00 0.025 + 4.4 Ht. vernon 4.00 0.025 + 4.4 Ht. vernon 4.00 0.025 + 4.4 Ht. vernon 4.00 0.025 + 4.4 Ht
Indianapolis 3.32 220 Washington 3.57 919 910
Indianapolis 3.32 2.20 Washington 3.57 919 Oakhand City 3.59 1.070 Princeton 3.68 2.85 Mt. Vernon 3.00 2.20 Mt. vernon 5.07 200

*Colored with carsmel.

MISCELLANEOUS FOOD PRODUCTS.

Under this head is placed a variety of subjects such as obesity cures, soda fountain syrups, coffee essences, vegetable butters, sausage fillers, junket tablets, pudding preparations, table sauces, etc. Of the 80 articles of this class 17, or 21 per cent., were illegal.

DRUGS.

Drugs are primarily intended for the cure of disease or the correction of abnormal conditions. While food adulteration is an economic fraud and rarely works an injury to the health of the consumer, the adulteration of drugs, either by lessening their strength or adding foreign ingredients, places in the hand of the physician an inferior article not adapted for the use to which it is put. When such drugs are used in the treatment of disease the adulteration becomes dangerous. A preparation of morphine may be prescribed by a physician for the relief of pain, the dose is fixed; if results are not forthcoming because of the adulteration or the weakening of the strength of the article, the dose is increased. When the bottle is empty the prescription may be refilled, this time with a full strength article. If the patient, thinking the drug is the same as before, takes a double dose, serious results will follow. Again, if the physician who prescribes a certain drug does not get the results he expects with his patient, he may change the prescription entirely, when all the fault may be due to an adulteration of the medicine in question. Certain classes of drugs are very liable to adulteration; indeed, some things which are pharmacopoeia preparations are rarely or never carried in stock by druggists as pure articles. This is true of black antimony, precipitated sulphur, and beeswax. Other goods frequently called both by prescriptions and customers are very liable to be of inferior strength. The tinctures prepared by the dispenser we have found to be frequently below standard. The same is true of many of the extracts; on the other hand chemicals, such as potassium iodide, Rochelle salts, sodium phosphate, zinc sulphate, boric acid, cream of tartar, etc., are evidently not adulterated.

Two conditions operate against the sale of pure drugs. The first is the fault of the druggist himself who may either be unfamiliar

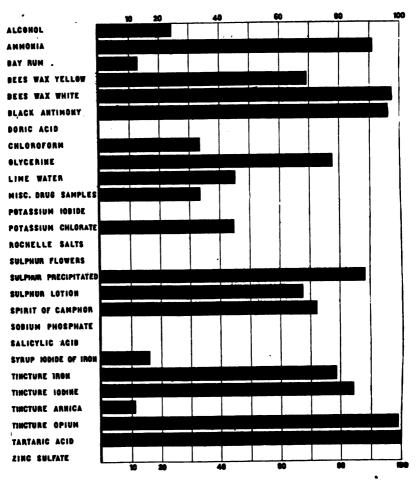
with the preparation of the articles he dispenses, or who delegates to boys or untrained clerks the preparation of medicines which can only successfully be produced by a skilled pharmacist. Secondly, the lack of care in the purchase of stock. While the wholesalers for the most part carry pure lines of goods, there are some concerns (fortunately for the honor of the drug-trade in Indiana located outside the State), that make a practice of supplying low grade, cut rate drugs which they know to be impure when they sell them. The grocer may excuse the sale of adulterated goods on the plea that his customers want cheap things, but the druggist has no such excuse. Realizing that the preparations that he dispenses are to be used as medicine, usually by people not familiar with the drug they are taking, it becomes his duty to see that the drugs he sells are of normal strength and purity. The selling of patent medicines and fraudulent remedies which purport to be curealls and relief for every disease, has never been regulated in Indiana. Enormous quantities of worthless mixtures of alcohol or bad whisky with caramel and bitters, or even preparations containing morphine, opium, heroin, cocaine and habit forming drugs, are sold without restriction. of cocaine is on the increase among the poorer classes, especially among the negroes. The habit is formed by the use of so-called catarrh cures which are, in fact, nothing but cocaine preparations put up and sold for the purpose of satisfying the cravings of the cocaine fiend. Fortunately for the people, the Federal Food and Drug Law which compels the placing on the label of every package containing alcohol, morphine, opium, cocaine, heroin, chloroform, chloral hydrate, and acetanilide, a statement of the quantity of such ingredients present, will make it clear to the purchaser what he is buving and will tend to suppress the manufacture and sale of a large number of worthless preparations. year there have been collected and analyzed 1,559 samples of drugs. Of this number 596 have been pure and 963, or 62.5 per cent., adulterated. This percentage of adulteration is very high and indicates either a demoralized drug market or extreme carelessness on the part of the druggist and dealer.

RESULTS OF ANALYSIS OF DRUG SAMPLES.

ARTICLE EXAMINED.	Good.	Bad.	Total.	Per Cent. Adulter- ated.
Alcohol Ammonia, Aqua Ammoniae Bay Rum Baesawax, yellow, Cera Flava Beesawax, white, Cera Alba Black antimony Boric acid, Acidum Boricum Chloroform Glycerine, Glycerinum Lime water, Liquor Calcis Miscellaneous drug samples Potassium indide, Potassii Iodidum Potassium oblorate, Potassii Chlotas. Rochelle salta, Potassii et Sodii Tartras Sulphur flowers. Sulphur flowers. Sulphur precipitated, Sulphur Praecipitatum Sulphur precipitated, Sulphur Praecipitatum Sodium phosphate, Sodii Phosphas. Salicylic acid, Acidum Salicylicum Syritu of demphor, Spiritus Camphorae Sodium phosphate, Sodii Phosphas. Salicylic acid, Acidum Salicylicum Tincture iron, Tinctura Ferri Iodidi Tincture iron, Tinctura Ferri Chloridi Tincture arnica, Tinctura Arnicae. Tincture arnica, Tinctura Arnicae. Tincture capium, Tinctura Opii Tartaric acid, Acidum Tartaricum Zinc sulphate, Zinci Sulphas.	100 7 68 27 2 2 14 91 10 7 5 4 4 4 17 1 30 7 7 1 1 30 7 2 1 1 1 0 0 3 1 1 0 0 3 1 1 0 0 3 1 0 3 1 0 3 1 0 3 1 0 3 1 0 3 1 0 3 1 3 1	32 68 10 60 67 41 48 75 5 0 124 2 77 0 0 138 112 9 80	132 75 78 87 69 43 143 666 15 7 9 4 4 141 3 107 7 156 177 133 81	• 24 . 2 90. 8 12. 9 69. 0 97. 1 95. 8 0 . 0 0 . 0 44. 4 0 00. 0 88. 0 16. 0 78. 5 84. 2 10. 6 98. 5
Total	596	963	1,559	62.5

PERCENTAGE OF ADULTERATION OF DRUGS IN INDIANA

YEAR ENDING OCTOBER 31.1906



ALCOHOL

Thirty-two of the 132 samples of alcohol analyzed were impure or below standard. In almost every case the alcohols were but slightly below the pharmacopoeia standard of 94.9 per cent. by volume. One sample only was diluted with water and in no case was methyl alcohol substituted for the grain alcohol purchased.

PURE ALCOHOLS.

	Retailer.	Where Collected.	Specific Gravity at 15.5°C.	
	Baur	Terre Haute	.8182	
	G. Reiss	Terre Haute Vincennes	.8181 .8195	l
1	I. J. Biggs	Princeton	.8150	١
1	A. F. Schmidt, H. J. Schoepfer	Washington Evansville	.8178 .8199	l
ı	W. H. Fogns	Mt. Vernon	8200	l
i	Dawso. & Boyce D. & H. Rosenbaum	Mt. Vernon	.8186 .8199	ı
Į	Porter, the Druggist	Peru	8189	
١	Blue Drug Store Chickasaw Pharmacy	Peru	.8200 .9:83	l
١	Bradley Bros	Peru	.8190 .8198	l
١	J. C. Hutzell Ranke & Nussbaum Creier & Bro	Ft. Wayne Ft. Wayne	.8186	l
١	Creier & Bro H. G. Sommers	Ft Wavne	.8198 .8195	ŀ
I	Meyer, Bros & Co	Ft Wayne Ft. Wayne	.8192	ŀ
1	Bowles Bros. John W. O'Harrow	Bloomington	.8196 .8194	l
١	Central Drug Store	Elkhart	,8184	ı
١	Public Drug Store	Goshen	.8191 .8190	l
١	D. C. Peters F. W. Meissner	Laporte	8200	l
l	J. M. Callender	Laporte	.8181 .8183	ŀ
l	City Drug Store	Michigan City	,8199	l
l	W. C. Letherman Heineman & Sievers	Valparaiso Valparaiso	.8193 .8198	Ì
ı	W. II. Porter M. W. Edmonds	Loganaport	.8196	l
1	Wm. C. Pfan	Delphi Jeffersonville Lsfayette	.8191 .8194	l
l	Wm. C. Pfau W. W. Johnson Schwaninger Bros	Lsfayette	.8197	ı
l		Jeffersonville	.8185 .8194	ŀ
Ì	B. Doolittle	New Albany Jeffersonville	.8192	
Ì	Crecelius McDonald-Stockdell Co	New Albany	.8183 .8193	
I	Conner's Drug Store	New Albany	.8:85	l
١	Floyd Parks Doherty's Drug Store Wells-Yaeger-Best Co	Jefferson ville	.8196 .9180	l
Į	Anderson Drue Co	Lafayette	.8183 .8192	
l	City Drug Store	Anderson	.8186	l
١	City Drug Store Buck & Brickley H. H. Ife People's Drug Store	Anderson	.8183 .8189	
I	People's Drug Store	Muncie	,8188	
1		Muncie	8183 .8198	
I	Physicians' Drug Store:	Winnels	,8188	l
1	F. W. Green	Alexandria	.8194 .8152	l
	Shaw & Jackson Physicians' Drug Store: City Drug Store. F. W. Green J. H. Kute F. L. Saylor.	LSIWOOD	.8178	
	Vay Dros variables and the contract of the con	Klwood Kokomo	.81 82 .8188	
1	Hollowell & Ryan	Kokomo	.8176	
	S. Rosenthal Francis Pharmacy	Tipton Indianapolis	.8185 .8178	
l	W. M Burk	Indianapolis	.8183	
	Francis Pharmacy W. M. Burk F. H. Carter L. W. Stucky L. N. Helms	Indianapolis	.8197 .8191	
	I. N. Heims	Indianapolis	.8177	
	Navin's Pharmacy	Indianapolis	.8167	

ALCOHOLS BELOW STANDARD.

Laboratory Number.	Retailer.	Where Collected.	Specific Gravity at 15.5°C.	Alcohol by Volume.	Remarks.
553 573 598 659 677 845 1024 1080 1078 712b 1217 2021 2121 2145 2233 2234 2234 2234 2344 2584 3536 3536	Buntin Drug Co. J. S. Modison Geo. J. Hoffman W. C. Watjen. R. G. Moore John Laval & Son R. E. Clark Butterbaugh & Co M. Kaylor Schaefer & Schaefer Pellen & Lewis Housworth Bros H. N. Jenner O. C. Boston R. P. Milton Bickneil & Co M. Kolb Corner Drug Store Ben Fisher M. M. Murphy Razan Bros Schultz & Boswell Cassell Bros E. C. Robinson Stringfellow & Co W. T. Scott F. H. Hubbard H. Mehlig C. L. Mitchell A. G. Baldwin	Terre Haute Terre Haute Terre Haute Terre Haute Vincennes Vincennes Evansville Wabash Huntington Huntington Huntington Huntington Huntington Huntington Huntington Huntington Huntington Huntington Huntington Huntington Huntington Huntington Logoshen South Bend Hammond Hammond Valparaiso Logansport Deli-hi Lafayette Lafayette Lafayette Lafayette Anderson Alexandria Elwood Kokomo Kokomo Tipton Noblesville	.8203 .8225 .8228 .8249 .8.263 .8.263 .8.275 .8.263 .8.275 .8.265 .8.277 .8.209 .8.277 .8.201 .8.202 .8.236 .8.237 .8.238 .8.246 .8.238 .8.246 .8.238 .8.246 .8.238 .8.246	93.93 93.36 93.29 989.72 92.12 93.47 93.87 92.30 93.31 93.53 93.31 93.53 93.31 93.53 93.31 93.53 93.31 93.53 93.98 93.96 93.96 93.96 93.96 93.96 93.96 93.97 93.98	Slightly below standard. Slightly below standard. Slightly below standard. Below standard. Below standard. Below standard. Below standard. Slightly below standard. Slightly below standard. Much below standard. Below standard. Below standard. Below standard. Below standard. Below standard. Below standard. Below standard. Slightly below standard. Slightly below standard. Slightly below standard. Slightly below standard. Below standard.

AQUA AMMONIA.

U. S. P. Aqua Ammonia contains 10 per cent. by weight of gaseous ammonia. Of the 75 samples examined, which were collected from both drug and grocery stores, but seven were up to strength; 90.8 per cent. were weak, dilute solutions, ranging from 20 to 96 per cent. U. S. P. strength. The so-called ammonia water dispensed by grocers for laundry purposes is rarely or never as strong as it should be. There is always some loss of strength as the stock grows old, but it is evident that the chief cause of weakness is not due to deterioration but to wilful dilution with water in the endeavor to produce a cheap article, to satisfy the demand of an ignorant public for a quart bottle for ten cents.

AQUA AMMONIA-LEGAL.

Laboratory Number.	Retailer.	Where Collected.	Percentage Purity.
786 796 1106 1831 2103 2192 3521	H. J. Lindeman. J. N. Jones. Bradley Bros. H. M. Philips Kaplansky & Morgan W. C. Letherman Will E. Axline & Co.	Washington	132 3 130.0 118.7 107.8 120.7 132.8 143.3

AQUA AMMONIA—ILLEGAL.

Herr	Brazil
red Keller	Brazil
). K. Horner	Brazil
S. Modison	Terre Haute
eo, J. Hoffman	Terre Haute
Baur.	Terre Haute
1. Reiss	Terre Haute
	Terre Haute
E. H. Robinson	Vincennes
H. J. Werker W. C. Watjen	Vincennes
R. G. Moore	Vincennes
C. S. Miller	Vincennes
	Princeton
	Princeton
Shoptaugh.	Princeton
H. G. May	
P. S. Clapp A. F. Schmidt.	Washington
C. Kightly	Washington
A Young.	Oakland City
A. G. Troutman	
I F Banga	Cakland City
F. Bomm Meck & Albers.	Evanaville
I. J. Schlaepfer.	Evansville
W. H. Fogus	Mt. Vernon
Dawson & Boyce	Mt. Vernon
D. & H. Rosebaum.	
Joe Haney	
Porter the Druggist	Peru
Blue Drug Store	
C. B. Woodworth & Co	Ft. Wayne
Houseworth Bros	Elkhart
H. G. Sommers	
Leonard & Bentz	Elkhart
D. J. Beeson.	Goshen
G. W. Rule.	Goshen
Coonley & Co	South Bend
O. C. Bostin	South Bend
R. P. Milton	South Bend
C Poters	Langeta
J. M. Collender N. Kolb	Laporte
N. Koth	Hammond
Busiohn & Schneider	Logansport
Ben Fisher	Logansport
W. Hoffman.	Logansport
W. H Porter	Logansport
M Murnhy	Delnhi
I. D. Bartlett	Lafavette
D. Bartlett Schultz & Boswell	Lafavette
L. Mehlig	Kokomo
Hollowell & Ryan	Kokomo
Hutchings & Murphy	Kokomo
Hutchings & Murphy F. H. Gerhart	Kokomo
Weher Drug Co	! Indianapolis
Frank E. Ross	Noblesville
Fruitt & Son.	N'allamilla

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HOUSEHOLD AMMONIA-ILLEGAL.

Laboratory Number.	Brand.	Retailer.	Where Collected.	Per Cent. Purity.
4863 5873 5866 5894 5917 5928 5941 6004 6030 6055 6253 6573	Golden Key Victor White Star Oxfords Standard Triumph Eagle.	Carter & Schober. E. Miller. Joe Loos G. E. Bursley. Amos R. Walter Ft. Wayne (frocery Co. F. T. Mensch T. B. Hoffman A. J. Bicknell. Robins Swinehart Krauer & Sons. Braidich Bros.	Indianapolis. Ft. Wayne Ft. Wayne Ft. Wayne Ft. Wayne Ft. Wayne Ft. Wayne Ft. Wayne Goshen Goshen Bikhart Laporte Whiting	46.0 45.0 88.0 86.0 39.0 78.0 69.0 46.0 29.0 32.0

BAY RUM.

Seventy-eight samples of bay rum were analyzed, of which 10, or 12.9 per cent., were adulterated. In every case the adulteration consisted in the use of methyl or wood alcohol. Most of the samples so adulterated contained but small quantities of ethyl alcohol. The use of methyl alcohol in such preparations is in violation of good business ethics and the pure drug law.

BAY RUM-ILLEGAL.

Laboratory Number.	Retailer.	Where Collected.	Per Cent. Methyl. Al.	Per Cent. Ethyl. Al.
876 1223 1918 1968 2191 2245 2257 2672 2703 2904	Meek & Albers Pellins & Lewis H. N. Jenner C. Coonley & Co. W. C. Leatherman G. W. Hoffman W. H. Porter J. Bros U. Scott L. T. Harker	Evansville Ft. Wayne Goshen South Bend Valparaiso Logansport Logansport Kokomo Tipton	31.0 26.8 52.3 16.9 21.6 35.8 35.8 38.5 42.9	3.6 11.83 3.9 25.0 7.83 1.7 4.3 8.0 2.0 36.16

BLACK ANTIMONY.

Of 45 samples of black antimony but two were pure antimony sulfid. All the others were almost entirely fraudulent. But seven of the entire number contained any antimony sulfid whatever, powdered coal, graphite or charcoal, mixed with small quantities of oxid of iron and marble dust being the usual article dispensed as black antimony.

The excuse of the wholesaler of such fraudulent mixtures is that black antimony is used only as horse medicine. Such an argument is a severe reflection on the intelligence of the veterinarian, for anyone who would knowingly prescribe a compound of coal and marble dust as a cure for disease knows no medicine.

BLACK ANTIMONY-LEGAL.

Laboratory Number.	Retailer.	Where Collected.	Remarks.
5369 5581	Beam & Lynn Freehafer & Co	New Castle	Pure. Pure.

BLACK ANTIMONY-ILLEGAL.

Laboratory Number.	· Retailer.	Where Collected.	Per Cent. Residue Insol. in HOL.	Remarks.
5082	C. G. Mueller	Indianapolis	43.88	Coal and marble dust
092	W. H. Kern		37.48	Coal and marble dust
096	Maas Pharmacy	Indianapolis	50.90	Coal and marble dust
112	Chas. W. Lambert	Indianapolis	43.96	Coal and marble dust
142	A. W. Owen	Franklin	96.82	Coal dust.
155	W. B. McCullough	Franklin	95.50	Coal dust.
187	Ernst Stahlhut.	Columbus	23.62	17 % Antimony Sulfid.
194	H. M. Holmes	Columbus	42.70 51.62	Coal and marble dust.
245 252	E. P. Whinery	Muncie	96.12	Coal and marble dust.
315	H. H. Ice	Muncie Covington	89.30	Coal dust present. Coal dust present.
320	J. P. Buckner	Cevington	97.46	Coal dust present.
330	Dan Holler	Attica	96.96	Coal dust present.
331	H. W. Harbauch	Attica	94.82	Coal dust present.
334	J. O. Reld	Attica	36.36	Largely iron.
338	C. F. Robinson	Attica	97.12	Coal dust present.
343	B. J. Winger	William port	96.58	Coal dust present.
365	Corner Drug Store	New Castle	97.50	Charcoal present.
36 6	L. E. Kinsey & Co	New Castle	96 82	Charcoal present.
367	G. F. Mowrer	New Castle	Y6.40	Charcoal present.
368	W. M. Pence	New Castle	42 50	Charcoal and marble.
370	White's Pharmacy	South Bend	48.40	Marble dust present.
371	Otto C. Bastian	South Bend	96.20	Coal dust present.
375	Coonley's Drug Store	South Bend	97.40	Coal dust present.
372 373	E. A. Schiffer	South Bend	85.48 43.94	Coal dust present. Marble dust present.
376	J. W. Papozinski W. M. Patterson	South Rend	98.00	Coal dust present.
377	Eliol Pharmacy	South Bend	67.08	Iron oxid, 2%; Anti.
٠,, ا	Enter I harmacy	South Bond	0,.00	Sulf., 38 %.
378	Louis C. Kreider	South Bend	45.24	Marble dust present.
379	Public Drug Store	South Bend	46.81	Marble duet present.
392	Economical Drug Store	South Bend	98 08	Coal dust present.
383	R. Fink	South Bend	23.60	Anti. Sult., 1.4 %.
380	Fred A. Kusel	South Bend	49.10	Marble dust.
385	V. Neidbalski	South Bend	91.00	Graphite present.
386	Henry L. Spohn	South Bend	43.58	Anti. Sulf., 51 %.
387	R. H. Kuss	South Bend	64.90	Anti. Sulf., 30 %.
388 389	E. A. Fink G. A. Sentrich & Co	South Bend South Bend	48.60 92.10	Coal dust.
100	U. A. Centrica & Co	Leouth Denu	34.10	Oval uust.

GLYCERINE.

Of the 61 samples of glycerine analyzed 47, or 77 per cent., did not conform to the standard of the U. S. Pharmacopoeia. In no case was there evidence of fraud, but the larger number of samples of inferior quality indicate that the trade uses little care in purchasing this article. Many of the samples contained free sulphuric acid, butyric acid, acrolein, etc., due to improper purification in the process of manufacture, and several contained a large amount of sugar.

GLYCERINE-LEGAL.

Laboratory Number.	Retailer.	Where Collected.	Specific Gravity.	H₂SO₄.	Butyric Acid.	Acrolein.	Remarks.
1105 1204 1823 1885 2040 1969 2130 2289 2436 2529 2630	H J Schlaepfer Bradley Bros. Meyer Bros. & Co H. B. McCord. F. J. Goldman J. M. Callender Meyer's Drug Store. J. W. Weis M. W. Edmonds City Drug Store. Shaw & Jackson J. H. Kute. Hutchings & Murphy	Elkhart Laporte South Bend Hammond Delphi Anderson Muncie Elwood	1.254 1.257 1.246 1.260				Pure. Pure. Pure. Pare. Pure.

GLYCERINE-ILLEGAL.

-							
199 537	S. Herr O. K. Horner	Brazil	1.248	Present	Present		Below Phar, stand Below Phar, stand
552	Bunton Drug Co	Terre Haute .					Below Phar, stand
605	A. Baur	Terre Haute .					Below Phar, stand
619	G. Reiss	Terre Haute .	1.247		Present		
	E 6 E 11					amount	Below Phar. stand
633	E. H. Robinson	Terre Haute .	1,254	Present	Present	2 -2 9-54	Below Phar. stand
643	H. J. Werker	Vincennes	1.247	Present	Present	Present	Below Phar. stand
711	J. J. Biggs	Princeton	1,256	PREEK AY	Present	245-1980	Below Phar, stand
726	E. Shoptaugh	Princeton	1.259	*******		1442 676	Below Phar. stand
	er o se	T. 1					Ca. salts present
738	H. G. May	Princeton	1.256	Present	Present	100000	Below Phar, stand
799	J. N. Jones	Washington .	1.246	Section 4.45	Present	200.000	Below Phar. stand
	or were	6.11	10 445				(Sugar present.)
808	Chas, Kightly	Oakland City	1.250	A	Present	Present	Below Phar. stand
822	A. Young	Oakland City					Below Phar. stand
833	A. G. Troutman,	Oakland City					Below Phar, stand
812	John Laval & Son	Evansville.	1.256	DEFECTED.	2000	Present	Below Phar, stand
864	J. F. Bomm	Evansville	1.259	SECTION.	Present	Present	Below Phar, stand
873	Meek & Albers	Evansville	1.249	CHERRY.		Present	Below Phar stand
938	D. & H. Rosenbaum	Mt. Vernon					Below Phar. stand
959	Joe Haney	Peru	1.253	21117	Present	0.000	Below Phar, stand
986	Blue Drug Store	Peru					Below Phar. stand
028	R. E. Clark	Wabash					Below Phar. stand
042	Fowler & Kerlin	Wabash	1.230	Present	Present	10000	Below Phar stand
nen.	D	W-V-t	2 050				Ca. salts present
059	Butterbaugh & Co	Wabash	1.250	Present	0.09.9475	3-3-1-03	Below Phar. stand
136	C.B.Woodworth&Co	Ft. Wayne	1.260		1112 2120	2444 342)	Below Phar, stand
100	Danks & Masslesses	774 W.	1 050		n		Sugar.
155	Ranke & Nussbaum	Ft. Wayne .	1.200	The same	Present	D	Below Phar. stand
187	H. G. Sommers	Ft. Wayne	11.253	Fresent	Fresent	Present	Below Phar. stand

24-Bd. of Health.

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GLYCERINE-ILLEGAL-Continued.

Laboratory Number.	Retailer.	Where Collected.	Specific Gravity.	H ₂ 804.	Bu ty ric Acid.	Acrolein.	Remarks.
1215 1808 1852	Pellens & Lewis Ashton Staman Houseworth Bros	Ft. Wayne Auburn Elkhart	1.250		Present	Present Present	Below Phar, stand.
1868 1985 1949 1984	Central Drug Store. O.J. Beeson. G. W. Rule C. Coonley & Co	Goshen	1.258 1.260		Present Present		Below Phar. stand. Below Phar. stand. Below Phar. stand.
2022 2035 2151 2179 2313	R. P. Milton F. W. Meissner M. Kolb Corner Drug Store	South Bend Laporte Hammond Valparaiso	1.251 1.240 1.216 1.247		Present Present	Present Present	Below Phar, stand. Below Phar, stand. Below Phar, stand. Below Phar, stand.
2329 2390	Lytle & Orr W. W. Johnson Schults & Boswell		1.247 1.250				Below Phar. stand. Below Phar. stand. Ca. salts present. Below Phar. stand. Ca. salts present.
2402 2416 2462	Anderson Drug Co Caswell Bros Buck & Brickley	Anderson Anderson Anderson	1.250	•••••	· · · · · · · · · · · ·	Present	Below Phar, stand. Below Phar, stand. Below Phar, stand. Ca. saits present.
2560 2568 2754 2830	W. H. Birely City Drug Store F. H. Hubbard	Alexandria Kokomo	1.254 1 233			Present	Below Phar, stand. Chlorid, present. Below Phar, stand.
2830	Francis Pharmacy	Indianapolis	1.249		Present	Present	Below Phar, stand Below Phar, stand

LIMEWATER (LIQUOR CALCIS).

One hundred and sixty-six samples of limewater were analyzed, and of that number 75, or 45.1 per cent., were below the U. S. P. standard. Limewater is simply a saturated aqueous solution of pure unslaked lime, the most easily prepared article to be found in a drug store. And yet the large number of adulterated samples would indicate that in nearly fifty per cent. of the drug stores of the State this article is not properly prepared. The explanation is doubtless that water is added to the jug containing the lime long after all of the lime has been dissolved. A number of the samples were entirely neutral, having no more alkalinity than tap water. The ignorance or greed of anyone who will dispense tap water when asked for something to correct acidity in milk fed an infant can only be suitably corrected by a severe application of official punishment.

LIME WATER-LEGAL.

Laboratory Number.	Retailer.	Where Collected.	Percentage Purity.
722 751 846 927 1014 1168 122a 1208 1809 1825 2030 2096 2115 2202 2217 2202 22224	E. Shoplaugh Clara & Sons John Laval & Son Dawson & Boyce Fowler & Kerlin Dreier & Bro Pellens & Lewis Meyer Bros. & Co Ashton Staman H. B. McCord H. M. Phillips Public Drug Store D. C. Peters F. W. Meissner Kaplousky & Moran E. W. Lindemann Bicknell & Co Heineman & Sievers Busjohn & Schneider	Princeton Princeton Evansville Mt Vernon Wabash Ft. Wayne Ft. Wayne Auburn Auburn Auburn South Bend Laporte Laporte Laporte Michigan City Michigan City Hammond Valparsiso Logansport	115.2 111.7 114.3 113.0 117.7 114.3 101.1 121.2 120.0 108.2 120.0 108.2 114.3 121.7 110.6 110.6 110.7
2276 2266 2268 2428 2428 2426 2528 2641 2695 2725 2841 2955 3526 3526 3526 4907 4907 4906 4907 4911 4912 4915 4918 4918 4918 4918 4920 4920 4925 4925 4925 4925 4926 4927 4936 4936 4936 4936 4936 4946 4956 4956 4956 4966 4977 4918 4918 4918 4918 4918 4918 4918 4918	Red Cross Pharmacy J. D. Bartlett City Drug Store Buck & Brickley Shaw & Jackson F. L. Saylor L. Mehlig W. Scott Hutchings & Murphy W. M. Birk E. H. Wilson A. W. Truitt Will E Axline & Co A. G. Baldwin G. A. Senrich & Co Chas. Coonley Robert P. Milton Otto C. Bastian Public Drug Store Eliel's Pharmacy E. A. Schiffer E. A. Schiffer	Logansport Lafayette Anderson Anderson Muncie Elwood Kokomo Kokomo Kokomo Indianapolis Indianapolis Indianapolis Noblesville Noblesville Noblesville South Bend South Bend South Bend South Bend South Bend South Bend South Bend South Bend	117. 7 110. 7 114. 3 108. 3 106. 9 116. 3 106. 9 116. 2 118. 2 114. 3 109. 3 120. 0 117. 7 102. 2 101. 2 108. 4 118. 4 108. 4 118. 4 108. 4 118. 7 109. 5 117. 6 118. 6 118. 6 119. 5 110. 6 110. 6
5109 5123 6165 5174 5182 5204 5269 5705 57746 5824 5848 5863 6006 6063 6098 6113	White's Pharmacy H. E. Freehafer & Co Fink Bros Louis C. Kreidler Fred A. Kusel Meyer's Drug Store Samuel T. Applegate Otto J. Klaer Ralph H. Kuss Smith & Brown Moffet & Morgan G. W. Steele Maas Pharmacy Owl Pharmacy Hoskins & Miller Theo Otto A. H. Febring Crescent Drug Store Lytle's Corner Drug Store Andrew's Drug Store City Drug Store City Drug Store F. A Mason L. Mehlig. Meyer Bros. Drug Store Christain Bros. Drug Store Beverforden L. J. Zollinger O. J. Buson C. D. Walls Coonley Drug Store Louis O. Kreidler	Elkhart	103.4 115.3 121.2 131.6 110.4 124.6 141.0 105.8 113.0 127.0 106.0 106.0 105.0 106.0 110.2 113.6 107.3 115.7

LIME WATES-LEGAL-Continued.

Laboratory Number.	Retailer.	Where Collected.	Percentage Purity.
6141	Senrich & Co		1.9.4
6147	S. T. Applegate		117.8
6160	J. E. C. F. Harper	Madison	113.6
6161	Gibson & Riedel	Madison	113.6
6162	McDonald, Stockdell & Co	New Albany	106.0
6314	Otto C. Bastian	South Bend	108.3
6321	Houseworth Bros	Elkhart	118.8
6322	Fred A. Kusel	South Bend	118.8
6347	Т. Н. Воудв	Laporte	123.1
6354	A. E. Keport	Hammond	103.1
6361	E. R. Star	Hammond	117.# 107.3
6390	W. H. Williams	Valparaiso	113.6
6396	Heineman-Sievers	Valparaiso	107.3
6422 6467	Oak Drug Store	Plymouth Rochester	107.3
6484		Peru	108.4
6560	Chicasaw Drug Store		105.3
6589	L. II. Mattern	Whiting	107.3
6599	Sommers Drug Store	Hammond	108.4

LIME WATER-ILLEGAL.

W. H. Fogus	Mt. Vernon
M. Kaylor	Huntington
Ranke & Nussbaum	Ft. Wayne
H. N Jenner	Goshen
G. W. Rule	Goshen.
C. Coonley & Co	
T. H. Boyd & Co	
Woodson & Willetts	Michigan City
J. W. Weis.	
Summers Pharmacy	Hammond
W. C. Letherman	Valparaiso
Ragan Bros	Latayette
People's Drug Store.	Muncie
V. E. Silverburg.	
E C. Robiason.	Alexandria
F. C. Jones.	Alexandria
Jay Bros	Kokomo
Hollowell & Ryan	Kokomo
Moore Bros	Tipton
L. T. Harker	
A. B. Carr E. W. Stuckey	
	Indianapolis
I. N. Heims	Indianapolis
Weber Drug Co	Indianapolis
G. E. Cimmerman	
H. L. Spohn	
	South Bend
Economical Drug Store	South Bend
J. W Papoczynski	
E. A. Fink.	
V. Neidbalski	South Bend
Mowrer's Drug Store	South Bend
Beam & Lynn	
Corner Drug Store	
L. E. Kinsey & Co	
C W. Lambert	Indianapolis
B. T. Fisher	Indianapolis
H. M. Holmes	Columbus
Dunham & Jacobs	Indianapolis
Given-Campbell Co	
W. D. Coleman	
John A. Hook	
C. G. Mueller	Indianapolis
Hargrove & Mullin	
F. B. Johnston & Co	
H.H.Ice	
F. E. Ross	Noblesville

LIME WATER-ILLEGAL-Continued.

Laboratory Number.	Retailer.	Where Collected.	Pereentage Purity.
5691	S. Rosenthal	Tipton	12.0
5756	H. H. Hubbard	Kokomo	71.6
5880	Ed. Mertz	Ft. Wayne	88.2
5910	F. D. Hoham	Ft. Wayne	3.0
5958	C. O. Haines	Danville	54.7
6013	J. A. Bickel	Goshen	87.3
6025	H, N. Jenner	Goshen	94.6
6019	F. H. Benz	Elkbart	29.4
6073 6087	E. B. Felt E. J. Finehout.	Elkhart	82.0 39.9
6109	W. M. Patterson	Elkhart	93.6
6127	Chapin Park	South Bend	52.6
6153	Leo Eliel	South Bend	33.6
6336	J. M. Callender	Laporte	84.2
6369	M. Kolb	Hammond	8.4
6418	L. Tanner.	Plymouth	42.1
6453	Edw. L. Fieser	Rochester	81.5
6473	R. E. Murphy	Peru	31.5
6494	Blue Drug Store	Peru	2.6
6522	City Drug Store	Michigan City	35.7
6530	E. W. Lindeman	Michigan City	97.3
6546	Kramer	Michigan City	52.6
6553 6564	Otto Kloepfer	Michigan City	79.0 75.7
6603	Whiting Drug Store	Whiting	91.5
0000	W.O. Rentheridau	Valparaiso	91.0

PRECIPITATED SULPHUR (SULPHUR PRAECIPITATUM).

Of the 141 samples of precipitated sulphur analyzed but 17 were pure. All the other samples, or 88.0 per cent., contained large quantities of calcium sulfate. But few samples contained more than 55 per cent. of sulphur, and in most of the samples the calcium sulfate content was about equal to that of sulphur. This condition is undobutedly the result of careless preparation.

Precipitated sulphur is a preparation made by boiling a mixture of powdered sulphur and slaked lime, filtering the solution, and adding hydrochloric acid. The precipitate is then filtered and washed. Precipitated sulphur contains no calcium sulfate and leaves no sediment on ignition.

PRECIPITATED SULPHUR-LEGAL.

Laboratory Number.	Retailer.	Where Collected.
5102 5105 5161 5270 5850 6319 6061 4884 4886 4888 4889 4890 4892	Maas Pharmacy. Owl Pharmacy. Theo Otto. Owl Drug Store. H. F. Beverforden. Otto C. Bastian T. J. Goldman. Bliel Pharmacy. H. E. Freehafer & Co Central Pharmacy R. H., Russ. H. L. Spohn J. W. Papoczynski	Pt. Wayne. South Bend.

PRECIPITATED SULPHUR-ILLEGAL.

Laboratory Number.	Retailer.	Where Collected.	Per cent. of Sulphur.	Per cent. of Calcium Sulfate.	Remarks.
715 780 836 866 880 978 1095 1161 1181 1828 1842 1878 1894 1911 1995 2049 2069 2183 2706	I. J. Biggs A. F. Schmidt A. G. Troutman J. F. Bomm Meek & Albers Porter the Druggist Schaefer & Schaefer Ranke & Nussbaum Dreier & Bro H. B. McCord H. M. Phillips Contral Drug Store F. J. Goldman Leouard & Bentz C. Coonley & Co. J. M. Callender T. H. Boyd & Co. Corner Drug Store W. Scott	Princeton Washington. Oakland City Evansville. Evansville. Peru Huntington Ft. Wayne. Ft. Wayne. Auburn Elkhart Elkhart Elkhart South Bend Laporte Laporte Valparaiso Kokomo	51.3 54.1 51.9 51.6 51.5 50.9 40.8 94.3 54.0 50.7 51.8 51.4 51.4 51.3	48.7 48.9 48.1 48.6 48.6 49.1 50.2 50.0 49.0	Adulterated. Adulterated.

PRECIPITATED SULPHUR-ILLEGAL.

Laboratory Number.	Rotailer.	Where Collected.	Per Cent. of Calcium Sulfate.	
4876	Coonley's Drug Store	South Bend	47.1	
4877	Fred A. Kusel		49.1	
4878	E. A. Schiffer	South Bend	48.6	
4879	White's Pharmacy	South Bend	47.9	
4882	Meyer's Pharmacy		46.7	
4883	Wm. M. Patterson	South Bend	47.3	
4885	E. A. Fink	South Bend	47.3	
4887	Public Drug Store.		47.7	
4893	Applegate's Pharmacy	South Bend	44.6	
4894	Otto C. Bartian	South Bend	45.3	
1895	V. Niedbalski	South Bend	48.3	
1896	Louis Kreidler		48.2	
4897	Economical Drug Store		47.1	

PRECIPITATED SULPHUR-ILLEGAL-Continued.

IN UILL DEL.	Retailer.	Where Collected.	Per Cent. of
9	Morer's Drug Store	New Castle :	46.8
0	L. E. Kinsey & Co	New Castle New Castle	48.5
1 2	Beam & Lynn W. M. Pence.	New Castle	47.6
8	A C Fonche	New Castle Knightstown	33.9 42.2
5	A. C. Fouche Columbia Drug Co	Knightstown	44.8
	Dunnam & Jacobs,	Indianapolis	29.0
3 5	W. D. Coleman	Crawfordsville	48.7 48.5
	Morgan & Dick	Crawfordsville	48 8
2	T E Mille	Cambridge City	52.9
4	John A. Hook C. G. Mueller Chas, W. Lambert	Indianapolis	38 (
8	C. G. Mueller	Indianapolis	45.1 47.0
5 8	Chas. W. Lambert. Hoskins & Miller	Indianapolis	47.0
6	R T Fisher	Indianapolis	47.0
0	B. T. Fisher. Crescent Drug Store.	Colnmbus	44.5
0	H. M. Holmes Phenix Drug Store	Columbus	49.5
7 8	Phenix Drug Store	Columbus	44 8
9	Niekov Drug Store	Mnncie	47.8
3	Physician's Drug Store	Muncie	49.8
7	M. Stewart Nickey Drug Store Physician's Drug Store Stevens & Nicolis Henderson Drug Store	Muncie	49.0
7	Henderson Drug Store	Anderson	46.
3 8	City Drug Store	Anderson	47.
2	City Drug Store E. T. Brickley Anderson Drug Co	Anderson	49.1
5	G. E. Cook	Anderson	49.0
6	G. E. Cook. Geo. D. Cook Hedges' Drug Store	Covington	49.0
5	Hedges' Drug Store	Covington . Williamsport Noblesville	49.5
	A. B. Donovan A. W. Truitt	Noblesville	44.
4	Moore Bros	Tipton	49
3	Moore Bros City Drug Store City Drug Store Opera House Drug Store	Tipton	44 49 49 47 47
6	City Drug Store	Elwood	47.4
8	Opera House Drug Store	Elwood	48.5
4	Dr. T. L. Saylor C. C. Robinson City Drug Store	Alexandria	46.
6	City Drug Store	Alexandria	48.5
4	Bradley Bros	Marion	48.5
9	Evans	Marion	48.0
3	Davis Drug Store	Marion	50.0
8	A. W. Leedy Meck Drug Store	Kokomo	47.5
5 .	J. Bros	Kokomo	48.8
7	L. Mehlig	Kokomo	45.8
2 3	C O. Scott	Kokomo	50.0
7	Meyers Bros	Ft. Wayne	49.
7	Christian Bros	Ft. Wayne	49.5
8	L. J. Zollinger. C. D. Walls	Ft. Wayne	46.8
		Elkhart	47.6
7	Housworth Bros E. B. Felt E. J. Finehout Public Drug Store W. M. Patterson T. A. Kusel Senrich & Co Samuel T. Applegate	Elkhart	49.1 50.0
0	E. J. Finehout	ElkhartSouth Bend	48.0
3	Public Drug Store	South Bend	47.7
8	W. M. Patterson	South Bend	48.6
4	Sanrich & Co	South Bend	49.2
i	Samuel T. Applegate	South Bend	46,9
5	E. R. Stanffer M. Kolb	Hammond	47.0
0 7	M, Kolb	Hammond	48.9
2	W H Williams	Valparaiso	49.1
9	Ben S. Wallick W. H. Williams Heineman-Sievers	Valparaiso	49.7
		Plymouth	45.9
	L. Tanner	Planouth	49.2
9		Plymonth	50.9
9	Oak Drug Store	Dlymouth	40.0
9	L. Tanner Oak Drug Store Shadel's Drug Store U. Rinard	Plymouth	50.2 48.3 49.8
9 4 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	Oak Drug Store Shadel's Drug Store. U. Rinard Shore & Wilson Ed. L. Fieser Geo. V. Dawson	Plymouth	48.3 49.8 48.3 48.7

PRECIPITATED SULPHUR-ILLEGAL-Continued.

Number.	Retailer.	Where Collected.	Per Cent. of Calcium Sulfate.
169	Geo. D. Keith	Rochester	47.6
179	R. E. Murphy	Peru	31.6
188	Chickasaw Drug Co	Peru	49.8
197	Blue Drug Store	Peru	47.9
603 609	M. W. Hamaker	Peru	49.7
20	Porter the Druggist Thieband & Co	Peru	46.5 47.6
47	Kramer Drug Co	Peru Michigan City	47.9
55	Otto Kloepfer	Michigan City	47.9
69	Whiting Drug Store	Whiting	48.3
79	Otto Negele	Hammond	49.6
592	Bicknell & Co	Hammond	48.7
596	Sommere	Hammond	48 6

BEESWAX.

Beeswax is prepared by melting the honey free comb made by the bees, and skimming and filtering off the impurities. It is very liable to adulteration, as is shown by the results of our analyses. Of 87 samples of yellow or natural beeswax, 60 contained paraffin in quantities ranging from 10 per cent to 100 per cent., while but two out of 70 samples of bleached or white wax were free from paraffin.

Beeswax is worth 50 cents a pound, paraffin but 10 cents, a difference which readily explains the heavy adulteration of this article.

BEESWAX, YELLOW-LEGAL.

Laboratory Number.	Retailer.	Where Collected.
5827 5840 5884 6441 6436 6548 6555 685 850 921 933 977 1037 1109 1815	Kramer Drug Co G. Reise H. J. Werker R. G. Moore John Loval & Son W. H. Fogus Dawson & Boyce Porter, The Druggist R. E. Clark M. Kaylor Bradley Bros Ashton Staman	Ft. Wayne, Valparaiso. Plymouth, Michigan City. Terre Haute. Vincennes. Evansville. Mt. Vernon. Mt. Vernon. Peru. Wabash. Huntington. Huntington. Auburn.
1830 1843 1861 1968 2025	H. M. Phillips. Housworth Bros. Public Drug Store. P. Milton	Auburn. Auburn. Elkhart. South Bend. South Bend.

BEESWAX, YELLOW-LEGAL-Continued.

Laboratory Number.	\	Retailer.	Where Collected.
2032 2091 2122 2384 2969	D. C. Peters Kaplansky & M Ragan Bres Schultz & Bosw E. H. Wilson	loran eli	Laporte. Michigan City. Lafayette. Lafayette. Indianapolis.

BEESWAX, YELLOW-ILLEGAL.

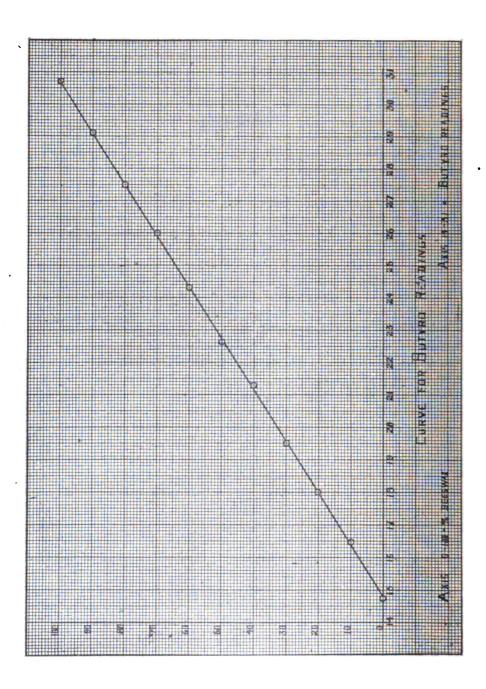
Retailer. Where Collected. Per Cent. Paraffin. Remarks. Per Collected. Per	BEESWAX, YELLOW-ILLEGAL.						
10	Laboratory Number.	Retailer.		Butyro Reading.		Remarks.	
1	5861 24 96 124 96 125 124 125 125 125 125 125 125 125 125 125 125	H. F. Beverforden F. D. Hohan H. L. Spohn Chapin Park Store T. A. Kusel A. E. Keport J. W. Weise Chickusaw Drug Co E. W. Lindeman Whiting Drug Co Sommers Drug Co S. Herr Fred Keller Bunton Drug Co J. S. Madison C. W. J. Hoffman Baur & Co W. C. Watjen C. S. Miller E. Shoptaugh H. G. May F. S. Clapp C. Kightly Meek & Albers Bradley Bros Butterbough & Co Schaefer & Schaefer J. C. Hutzell H. N. Jenner G. W. Meissner M. Kolb Heineman & Sievers Red Cross Pharmacy Cassell Bros Buck & Brickley E. P. Whinrey V. E. Silverburg Stringfellow & Co F. L. Saylor W. H. Bireley L. Mehlig Hutchings & Murphy J. C. Lindsay Moore Bros I. Meins C. L. Mitchell	Ft. Wayne South Bend. South Bend. South Bend. South Bend. Hammond Hammond Hammond Hammond Brazil Brazil Brazil Hammond Hammond Hammond Hammond Hammond Hammond Hazil Hammond Hazil Hammond Hazil Hammond Haril Harre Haute Terre Haute Terre Haute Terre Haute Terre Haute Terre Haute Herre Haute Terre Haute Terre Haute Herre 28.9 25.9 21.6 27.8 29.6 14.3 30.0 23.9 29.4	30.0 90.0 90.0 90.0 30.0 30.0 30.0 30.0			

BEESWAX, WHITE-LEGAL.

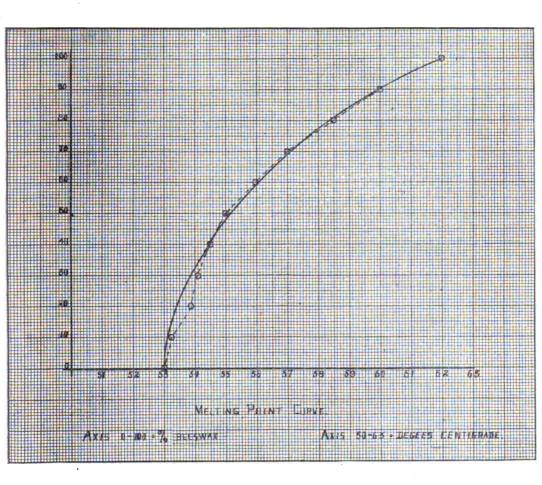
Number.	Retailer.	Where Collected.	Per Cent. Paraffin.
62 14	Buntin Drug Co	Terre HauteValparaiso	None. None.
	BEESWAX, V	VHITE-ILLEGAL.	•
15	Fred Keller	Brasil	75
82 99	J. S. Madison Geo. J. Hoffman	Terre !! aute	Pure paraffir
13	Baur	Terre Haute Terre Haute	30
31		Terre Haute	20 85
54	H. J. Werkes	erre Haute	20
73	W. E. Watien	Vincennes	85
B7	R. G. Moore	Vincennes	20
)1	C. S. Miller	Vincennes	· 85
12 39	H.G. May	Princeton	25
9	G. Reiss H. J. Werkes W. E. Watjen R. G. Moore C. S. Miller H. G. May F. S. Clapp H. J. Lindenmann J. N. Jones C. Knightly	Washington	15
15	n.J. Lindenmann	Washington	80 20
7	J. N. Jones	Washington Oakland City Evansville	
2	Mark & Albara	Uakland City	15
δĺ	O. Knightly Meek & Albers W. H. Fogus Dawson & Boyce	Mt Vansville	20 20
4	Dawson & Royce	Mt. Vernon	20
9	D. H. Rosenbaum Porter, the Druggist. Blue Drug Store	Mt Vernon	30 95
31	Porter, the Druggist	Mt. Vernon	90 90 20
93	Blue Drug Store	Peru. Wabash	Šŏ
7	Dradie bros	Wabash	20
4	R. E. Clark	Wabash Wabash	15 .
3	Fowler & Kerlin Butterbaugh & Co	Wabash	Pure paraffit 95
4	Butterbaugh & Co	Wabashi	95
9	M. Kaylor Schaefer & Schaefer	Huntington	20
77	Schaefer & Schaefer	Huntington	15
0	Bradley Bros. J. C. Hutzell H. G. Sommers	Huntington	Not pure wa:
0	J. C. Hutzell	Ft. Wayne	20
3	H. G. Sommers	Ft. Wayne	75
699	Ashton Stamon H. B. McCord Housworth Bros	Auburn	• 20
ă	Hannworth Proc	Auburn Elkhart	15 20
4		Goshen	20 20 ·
5	G W Rule	Goshan	20 · 15
7	G. W. Rule Public Drug Store Myers' Drug Store	Goshen South Bend South Bend South Bend	70
o l	Myers' Drug Store	South Bend	25
16 B	R P. Milton	South Bend	25 30
io I	D. C. Peters	Laporte	15
3 2	F. W. Meissner	Laports	15 20
2	J. M. Callender	Laborta	15
5	T. H. Boyd & Co	Laporte	15 15
2	Myers' Drug Store. R. P. Milton D. C. Peters P. W. Meissner J. M. Callender T. H. Boyd & Co. Koplansky & Moran	Laporte	20 80
0	J. W. Wels	Hammond	80
3	J. W. Weis M. Kolb W. C. Letherman	Hammond	10
99	Ben Fisher	Valparaiso	15
ï	W G Poster	Logansport Logansport Logansport	90
2	W. H. Porter Red Cross Pharmacy	Logansport	10
n i	M. M. Murphy	Delphi	10 85
iğ l	Lytle & Orr	Dalphi	35
š I	Ragan Bros	Lafavette	70
983	Lytle & Orr Ragan Bros. Schultz & Boswell Anderson Drug Store City Drug Store Caseill Bros Buck & Rrickley	Lafayette Lafayette Anderson	20
IO I	Anderson Drug Store	Anderson	Pure paraffi
77	City Drug Store	Anderson	Pure paraffi
i	Cassill Bros	Anderson	Pure paraffi
71	Buck & Brickley.	Anderson	90 90
10 1	E. P. Whinrey	Muncie	90
2	Buck & Brickley. E. P. Whinrey Physicians Drug Store W. H. Bireley. F. L. Saylor.	Muncie Alexandria	Pure paraffi
34	W. H. Bireley	Alexandria	
90	F. L. Saylor	Elwood	Pure paraffi Pure paraffi
5		Kokomo	Pure paraffi
3	L. Mehlig	Kokomo	Pure paraffi 90
8	nonowell & Kyan	Kokomo	90
3	L Mehlig Hollowell & Ryan J. O. Lindsay Weber Drug Co Will E Axline & Co	Tipton Indianapolis	10
17 80	Webst Drug Go	Indianapolis Noblesville	80 80

BEESWAX.

The butyro-refractometer of Zeiss can be used advantageously in determining the purity of a beeswax, the refractive index being very different from that of paraffin, its chief adulterant. If care is taken to control the temperature at which the reading is made it is possible to determine accurately the percentage of adulteration. The addition of each ten per cent. of paraffin decreases the butyro reading 1.6 degree. Based on this constant difference one of the assistant chemists, N. Thompson, has plotted the following curve, taking for a basis for work definite mixtures of beeswax and paraffin.



He has also determined the change in melting point for different mixtures of beeswax and paraffin and the results are plotted in the following curve.



SPIRITS OF CAMPHOR (SPIRITUS CAMPHORAE).

U. S. P. spirits of camphor is prepared by dissolving 100 grams of camphor gum in 800 centimeters of alcohol and making up to one liter. But 30 to 70 samples analyzed contained a sufficient quantity to satisfy this formula. One sample contained but 16 per cent. of the required amount.

SPIRITS OF CAMPHOR-LEGAL.

Number.	Retailer.	Where Collected.	Per Cent. U. S. P. Strength.	Per Cent. Alcohol.
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	J. Biggs. F. Schmidt. J. Lindeman N. Jones H. Fogus. naefer & Schnefer adley Broe. B. Woodworth J. Goldman J. Beeson J. Beeson J. Beeson Weers Orug Store. P. Milton y Drug Store P. Milton y Drug Store H. Willetts plauski & Moran W. Weis sjohn & Schneider H. Porter M. Murphy D. Bartlett Scott nultz & B. swell ue Front Drug Store ancis Pharmacy sher Drug Go. H. Wilson R. Axline & Co. W. Mei-sner.	Princeton Washington Washington Washington Mt. Vernon Huntington Huntington Ft. Wayne Eikhart Goshen Goshen Goshen Goshen Gothen Gothen Loganer Huntington Huntington Loganeport Loganeport Loganeport Loganeport Lafayette Kokomo Lafayette Tipton Indianapolis Indianapolis Indianapolis Indianapolis Noblesville Laporte	149.0 324.0 95.0 96.0 100.0 100.0 117.0 102.0 118.0 95.0 118.0 116.0 115.0 121.0 108.0 113.0 109.0 113.0 109.0 113.0 109.0 113.0 109.0 110.0 110.0 110.0 110.0 110.0	555 516 756 776 675 596 666 726 726 726 736 747 736 747 751 777 782 79
18 B 19 C 18 F 24 A 29 A	G. Moore	Vincennes	73.0 81.0 53.0 83.0 74.0 89.0	62.1 61.2 44.1 77.4 61.0 61.2

19	R. G. Moore	Vincennes	73.0	62.1
18	B. Shoptaugh .	Princeton	81.0	61.2
19	Clark & Sons	Princeton	53.0	44.1
8	F. S. Clapp	Washington	83.0	77.4
24	A. Young	Oakland City	74.0	61.0
29	A. J. Troutman	Oakland City	89.0	61.2
ii	John Leval & Son	Evansville	79.0	60.0
ก้	J. F. Bomm	Evansville	68.0	77.0
ï	Meek & Albers	Evansville	86.0	75.9
37	Dr. H. Rosenbaum	Mt. Vernon	62.0	56.4
7	Porter, the Druggist	Peru	80.0	47.1
5	Blue Drug Store	Peru	93.0	76.5
13	Chickasaw Pharmacy	Peru	90.0	54.4
2	Bradley Bros	Wabash	62.0	56.1
íî	Fowler & Kerlin	Wabash	85.0	51.6
8	Posttonia and to Co	Wabash	85.0	61.2
6	Butterbaugh & Co	TA ST		76.9
	J. C. Hutzell	Ft. Wayne	69.0	56.0
0	Dreier & Bro	ft. Wayne	58.5	
35	H. G. Sommers.	Ft. Wayne	67.0	59.6
)6	Meyer Bros. & Co	Ft. Wayne	88.0	55.2
22	Pellins & Lewis	Ft. Wayne	86.0	53.5
10	Ashton Staman	Auburn	88.0	75.3
32	H. M. Philips	Auburn	87.0	54.0
19	Hammond Bros	Elkhart	67.0	63.0
6	Central Drug Store	Elkhart	67.2	83.0
)2	Lennard & Bents	Elkhart	89.0	75.0
20	H. N. Jenner	Goshen	87.0	56.0
6	Public Drug Store	South Bend	84.0	59.1
9	O. C. Bostin	South Bend	62.0	57.0
3	E. W. Lindeman	Michigan City	60.0	50.4
:1	Bicknell & Co	Hammond	90.0	62.4
18	F. W. Meissner	Laporte	87.0	67.5
1	D. C. Peters	Laporte	82.0	61.5
9	M. Kolb	Hammond	89.0	64.5
5	Corner Drug Store	Valparaiso	58.0	78.6
)Š	W. C. Letherman	Valparaiso	79.0	76.2
Ñ.	Heineman-Sievers	Valparaiso	60.0	49.2
7	Ben Fisher	Logansport	42.0	56.4
2	Red Cross Pharmacy	Logansport	80.0	45.0

SPIRITS OF CAMPHOR-ILLEGAL-Continued.

Laboratory Number.	Retailer.	Where Collected.	Per Cent. U.S.P. Strength.	Per Cent. Alcohol.
2290 2212 2222 22212 22327 22327 22327 22327 22327 22327 22327 2232 2245 2245 2255 2255 2255 2255 2255	M. W. Edmonds. Lytler & Orr W. W. Johnson Ragan Bros. Wells-Yeager-Best. Anderson Drug Co J. B. Wehrle City Drug Store Cassel Bros Buck & Brickley H. H. Ice Peoples Drug Store E. P. Whinery V. E. Silverburg Physicians Drug Store Gity Drug Store Gity Drug Store F. C. Jones F. W. Green J. H. Kute F. L. Saylor W. Coggswell Jay Bros L. Mehlig Hollowell & Ryan T. H. Gethart H. Methart H. Mehlig W. M. Birk A. B. Carr F. H. Carter H. J. Huder E. W. Stucky I. N. Heims Navin's Pharmacy Frank Ross C. L. Mitchell Truitt & Son A. G. Baldwin	Delphi Delphi Lafayette Lafayette Lafayette Lafayette Anderson Anderson Anderson Anderson Anderson Anderson Muncie Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Indianapolis Noblesville Noblesville Noblesville	90.0 75.0 16.0 85.0 49.0 58.0 16.0 42.0 62.0 75.0 66.0 76.0 76.0 77.0 76.0 82.0 77.0 82.0 82.0 82.0 82.0 82.0 83.0 84.0 85.0 86.0	75.3 64.5 68.4 39.3 57.8 54.0 51.9 54.8 40.8 78.6 59.1 59.2 60.3 52.6 75.5 62.1 58.4 78.0 60.7 76.5 58.4 78.0 60.0 76.6 76.5 54.8 78.0

SYRUP OF IODIDE OF IRON (SYRUPUS FERRI IODIDI).

Of the 56 samples of syrup of iodide of iron analyzed but 9, or 16 per cent., were below standard.

SYRUP OF IODIDE OF IRON-LEGAL.

Laboratory Number.	Retailer.	Where Collected.	Per Cent. U.S.P. Strength.	
4954	Columbia Drug Co.	Knightstown	160.0	
4958	J H. Trees	Knightstown	116.0	
5007	Dunham & Jacobs	Indianarolis	106.0	
5016	Ed Hoshour	Indianapolis	186.0	
5080	C. G. Mueller	Indianapolis	104.0	
5090	Maas Pharmacy	Indianapolis	96.0	
5107	Owl Pharmacy	Indianapolis	188.0	
5111	Chas. W. Lambert	Indianapolis	106 0	
5121	Hoskins & Miller	Indianapolis	1-8.0	
5124	B. T. Fisher	Indiarapolis	194.0	
5135	B. M. Keene.		192.0	
5143	A. W. Owens		101.0	
5193	A. H. Fehring		192.0	
5192	H. M. Holmes	Columbus	196.0	

SYRUP OF IODIDE OF IRON-LEGAL-Continued.

Laboratory Number.	Retailer.	Where Collected.	Per Cent. U.S.P. Strength.
5258 5265 5273 5276 5283 5355 5679 5679 5772 5773 5776 5777 5777 5777 5777 5777 5777	Nickey Drug Store Physicians' Drug Store. Owl Pharmacy. Stevens & Nicolls D. B. Campbell G. G. Graham F. E. Ross. City Drug Store F. A. Mason. Hildebrand & Ansley Leo Eliel J. W. Papozinski G. E. Cimmerman Economical Drug Store Robert Milton Henry L. Spohn E A. Schiffer Public Drug Store R. Fink Otto J. Klaer R. H. Russ Meyers' Drug Store V. Neidbalski Fred A. Kusel W. M. Patterson White's Pharmacy Otto C. Bastian G. A. Senrich & Co Louis C. Kreidler L. E. Kinsey & Co Geo. F. Morer W. M. Pence. Daniel Stewart	Muncie. Muncie. Muncie. Muncie. Muncie. Muncie. Muncie. Muncie. Veedersburg Noblesville Elwood Marion. Mari n South Bend	194.0 184.0 182.0 96.0 190.0 190.0 190.0 190.0 190.0 186.0 186.0 180.0 190.0 180.0 190.0 180.0 190.0 1
5150 5183 5297 5301 5690 5770 5778 5781 5783	D. H. Miller Crescent Drug Store E. T. Brickley Anderson Drug Co S. Rosenthal H. E. Freehafer & Co E. A. Fink Central Pharmacy Chas. Coonley & Co		88.0 52.0 54.0 58.0 88.0 90.0 88.0 82.0 74.0

TINCTURE OF ARNICA—TINCTURA ARNICAE.

Nine of the 81 samples of tincture of arnica analyzed were prepared with methyl alcohol.

TINCTURE OF ARNICA-ILLEGAL.

Laboratory Number.	Retailer.	Where Collected.	Per Cent. Methyl Alcohol.	Per Cent. Ethyl Alcohol.
1015	Bradley Bros	Wabash	35.4	1.8 3.2
698 1160	C. S. Miller	Vincennes	32.4 31.3	3.2 8.1
1191	H. G. Sommers	Ft. Wavne	40.7	5.1
2230	B. Fisher	Logansport	28 7	22.5
2570	City Drug Store	Alexandria	2.1	32.3
2916	E. W. Stucky	Indianapolis	33.3	7.5
2977	Navin's Pharmacy	Indianapolis	31.15	5.9

TINCTURE OF IODINE (TINCTURA IODI).

But 21 out of 133 samples of tincture of iodine analyzed were of full strength. This corresponds to 84.2 per cent. adulteration. The fault is doubtless in the method of preparation, neglect to use the proper quantities of iodine and potassium iodide, or incomplete solution of the chemicals.

* TINCTURE OF IODINE-LEGAL.

Laboratory Number.	Retaller.	Where Collected.	Per Cent. of Purity.
3894 3903 5117 5164 5832 5875 5990 5990 6114 6100 6154 6150 6154 6385 6345 6374 6385 6465 6499 6535	Chas. D. Knoefel Chas. E. Crecelius Chas. W. Lambert Theo. Otto Geo. Loesche Ed. Mertz F. E. Dilley H. L. Neidlinger J. A. Bickel Public Drug Store Senrich & Co Senrich & Co Senrich & Co T. H. Boyds Jos. W. Weise W. H. Williams G. D. Keith M. W. Hamaker Ed. M. Moran	New Albany New Albany Indianapolis Columbus Ft. Wayne Ft. Wayne Brasil Brazil Goshen South Bend South Bend South Bend Terre Haute Laporte Hammond Valparaiso Rochester Peru Michigan City	104.5 171.8 132.0 101.8 137.9 101.0 104.3 138.3 109.4 106.5 102.4 110.7 106.1 106.5 101.7 106.5 101.7 106.8 129.3 105.7 108.3

TINCTURE OF IODINE-ILLEGAL.

524	Shultz & Co	Brazil	80.0
696	C. S. Miller		63.8
820	A. Young	Oakland City	65.0
893	H. J. Schlaepfer	Evansville	83.9
1031	R. E. Clark	Wabash	65.0
1113	J. C. Hutzell	Ft. Wayne	90.6
3840	Gentry Drug Store		79.5
3845	C. O. Maple		61.6
3851	Bowles Bros	Bloomington	86. 2
3852	John W. O'Harrow	Bloomington	91.1
1807	Ashton Staman	Auburn	55.6
1982	C. Coonley & Co	South Bend	74.3
38 80	Wm. C. Pfau.,	Jefferson ville	85.5
3885	Schwaninger Bros	Jeffersonville	80.3
3910	McDonald-Stockdell Co	New Albany	40.8
3915	Conner's Drug Store	New Albany	81.3
3923	Floyd Parks	Jeffersonville	80.3
3930	Doherty's Drug Store	Jeffersonville	67.2
4947	A. C. Fouche		72.8 70.8
4951 4971	Swith & Brown	Knightstown	58.0
5006	Dr. W. A. Johnston	Cambridge City	23.5
5032	Dunham & Jacobs Morgan & Dick	Crawfordsville	85.7
5060	F. T. Mills	Cambridge City	64.7
5071	John A. Hook	Indianapelis	87.6
5095	W. H. Kern	Indianapolis	60.3
5100	Maas Pharmacy	Indianapolis	73.5
5108	Owl Pharmacy		83.8
5122	Hoskins & Miller	Indianapolis	79.8
5128	B. T. Fisher	Indianapolis	87.8
5131	G. T. Traub		57.7
0101	VI A. A. W. V. V. V. V. V. V. V. V. V. V. V. V. V.	. Transminhous	VI.1

25-Bd. of Health.

TINCTURE OF IODINE-ILLEGAL-Continued.

Retailer.	Where Collected.	Per Cent. of Purity.
B. M. Keene	Indianapolis	87.6
R R C Wood	Reambling.	75.8
	Franklis.	70 5
D. H. Miller A. H. Febring	Franklin	96.7
A. H. Febring	Columbus	95.6
Ernst Stahlbut	Columbus	75.5 76.4
H. M. Holmes	Columbus	65.4
Phoenix Drug Store Lytle's Corner Pharmacy	Columbus	72.6
Lytle's Corner Pharmacy	Rushville	85.5
Physicians' Drug Store	Muncie	40.0
Owl Drug Store	Muncie	81.5 68.8
Walker Bros	Muncie	79.0
City Drug Store	Anderson	30.0
A. W. Truitt	Noblesville	41.9
H. Meblig	Tipton	78.0
City Drug Store	Elwood	76.0
King Drug Store City Drug Store Model Drug Store	Alexandria	83.7 61.9
		98.0
Byans,	Marion	62.6
Davis Drug Store	Marion	95.1
Branes Bross. Davis Drug Store. Hildebrand & Ansley. A. W. Leedy. F. H. Gerhart.	Marion	67.4 80.0
P. H. Cashart	Kokomo .	88.8
G. E. Meck	Kokomo	E 0 0
Massas Para	TA Was more	
Christian Bros	Ft. Wayne Ft. Wayne Ft. Wayne	75.0
H. F. Beverforden	Ft. Wayne	61.8
T. D. Hohan	Pt. Wayne	90.8 65.1
H. F. Beverforden L. J. Zollinger T. D. Hohan N. M. Mendenhall	Brazil	76 1
8 Herr F. M. Schultz T. W. Inglebart Houseworth Bros	Brazil	75.0 61.8 96.8 65.1 76.1 77.9
F. M. Schultz	Brazil Brazil	71.0 73.9 72.2 60.0 88.9 57.8 36.6
T. W. Inglebart	Brazil	73.9
Houseworth Bros	Blkbart South Bend	73.2
I E C F Harner	Madison	38.0
J. E. C. F. Harper C. R. McLeland	Madison	88.9
J. P. McDermont Fred Keller	Madison	57.8
Fred Keller	Brazil Terre Haute	36.6 45.0
Geo Reiss G. W. J. Hoffman	Terre Haute	75.3
E. Hampton	Terre Haute	75.3 68.4
City Hall Pharmacy	Terre Haute	81.6
B. Hampton City Hall Pharmacy Wm. P. Henner Red Cross Pharmacy	Terre Haute	95.1
Red Cross Pharmacy	Terre Haute	95.5
R. H. Burns & Son Cook & Black Big Four Pharmacy C. T. Dawson	Terre Haute	81.6 95.1 98.8 75.7 82.7 88.9 58.9
Big Four Pharmacy	Terre Haute	88.9
C. T Dawson	Terre Haute	58.9
Otto C. Bastian	Couth Bend	67.5 73.9 88.9 95.5
B. C. Zahrt. F. W. Meissner	Laporte	73.9
P. W. Meissner A. E. Kepert E. R. Stanferr	Hammond	00.7
E. R. Stanferr	Hammond	74.6
M. Kolb Ben S. Wallick	Hammond	95.5 74.6 78.3
Ben S. Wallick	Valparaiso	1 97.5
Corner Drug Store	. Valparaiso	53.8
L. Tanner	Plymouth	64.0 41.5
L. Tanner Geo. Vinal	Plymouth	41.5 75.0
VP 102 1	Dimmonth	90.7
Shore & Wilson . Edw. Fieser	Rochester	84.0
Edw. Fieser	Rochester	53.0
B E Museby	Rochester Peru	40.8 86.8
Blue Drug Store	Peru	81.6
Porter, the Druggist	Peru	62.2
	Dann	87.4
I Brebard & Go.	. Foru	21.3
Thieband & Co City Drug Store E. W. Lindeman	Michigan City	75.8 84.9

TINCTURE OF IODINE-ILLEGAL-Continued.

Laboratory Number.	Retailer.	Where Collected.	Per Cent. of Purity.
6544 6550 6556 6566 6575 6587 6594	Kramer Drug Store. Otto Kloepfer L. Mattera Whiting Drug Store Otto Negele Bioknell & Co Sommers	Michigan City Whiting Whiting Hammond Hammond	32.9 82.7

TINCTURE OF IRON (TINCTURA FERRI CHLORIDI).

Of 177 samples analyzed 138, or 78.5 per cent., were below the U. S. P. standard of not less than 13.28 per cent. of anhydrous ferric chloride. The low percentage of iron may be due to the use of impure chemicals, incomplete solution, or carelessness in preparation. We have prepared several samples according to the official U. S. P. method and had no trouble in producing a normal article.

TINCTURE OF IRON-LEGAL.

Laboratory Number.	Retailer.	Where Collected.	Specific Gravity.	Percentage Purity.	Remarks.
498 513 707 725 750 798 861 9369 1112 1923 2377 2501 2755	S. Herr Fred Keller I. J. Biggs E. Shoptaugh Clark & Sons J. N. Jones J. F. Bomm Joe Haney Blue Drug Store J. C. Hutzell H. N. Jenner Wells-Yaeger-Best Co E. P. Whinrey F. H. Hubbard	Brazil Brazil Brazil Princeton Princeton Princeton Washington Evansville Peru Peru Fort Wayne Goshen Lafayette Muncie Kokomo	.9436 1.0483 .9723 .9402 .9673 .9675 .9685 .9814 1.0147 .9791 .9340 .9740 1.0326	125.1 112.9 142.6 112.9 138.8 170.0 159.5 142.6 133.5 166.6 148.6 148.6 149.9	Pure. Pure. Pure. Pure. Pure. Pure. Pure. Pure. Pure. Pure. Pure. Pure. Pure. Pure.
Laboratory Number.	Retaile	er.	Where C	collected.	Per Cent. U.S.P. Strength.
4946 4957 5098 5114 5153 5163 5172 5821 5397	A. C. Fouche. J. H. Trees. Mass Pharmacy. Chas. W. Lambert W. B. McCullough Theo. Otto A. H. Fehring J. P. Buckner. Henry L. Spohn		Knightsto Indianapo Indianapo Franklin Columbus Columbus Covingtor	wn	106.0 100.2 112.2 101.2 110.9 100.0 104.4 106.2 100.0



TINCTURE OF IRON-LEGAL-Continued.

Laboratory Number.	Retailer.	Where Collected.	Per Cent. U.S.P. Strength.
5400 5406 54106 5742 5948 6098 6155 6294 6301 6329 6345 6505 6545 6575	Robert P. Milton Economical R. Fink Meek Drug Store O. L. Thompson Public Drug Store Leo Elicl Red Cross Pharmacy Averit & Dorsey E. C. Zahrt T. H. Boyds A. E. Kepert M. W. Hamaker Porter the Drugsist Kramer Drug Store Otto Negele	South Bend South Bend Danville South Bend South Bend Terre Haute Laporte Laporte Hammond Peru	100.0 100.0 125.1 126.2 106.8 102.5 102.5 102.5 103.1 108.7 116.9 101.2 110.2 110.5

TINCTURE OF IRON-ILLEGAL.

Bunton Drug Co	Terre Haute
E. H. Robinson	
A. Young	
Smith & Brown	
Dunham & Jacobs.	
Morgan & Dick	
Dean House Pharmacy	
J. N. Marson	
John S. Hook	
C G Mueller	
W. H. Kern	
Owl Pharmacy	
Hoskins Pharmacy	
B. F. Fisher	
R. B. Wood	
A. C. Owen	
D. H. Miller	
Crescent Drug Store	
Krnst Stalhut	
H. M. Holmes	
Phoenix Drug Store	
B. P. Whinery	
Andrews Drug Store	
H. H. Ice	
M. Stewart	
Owl Drug Store	Muncie
Walker Bros	
Henderson Drug Co	
Carrell Bros.	
Anderson Drug Co.	. Anderson
Geo. D. Cook	
H. Songer	
W. H. Wallace	Veedersburg
A. M. Booe	Veedersburg
H. E. Freehafer & Co	
Fred A. Kusel	South Bend
J. W. Papozinski	South Bend
Corner Drug Store	
Mowrer's Drug Store	
Central Pharmacy	
White's Pharmacy	
Leo Eliel	
G. A Senrich & Co.	South Bend
Applegate's Pharmacy	
Public Drug Store.	
W. M. Patterson	
L. E. Kinsey	
E. A. Fink	
Louis Kreidler	
W. M. Pence	
· · · · · · · · · · · · · · · · · · ·	South Bend

TINCTURE OF IRON-ILLEGAL-Continued.

Laboratory Number.	Retailer.	Where Collected.	Per Cent. U. S. P. Strength.
5412	E. A. Schiffer V. Neidbalski R. H. Kuss & Co. Otto J. Klaer Chas. Coonley Cimmerman's Pharmacy Ream & Lynn	South Bend	72.7
5413	V. Neidbalski	South Bend	95.6
5414 5415	Otto J. Klass & Co.	South Bend	89.0 61.2
5416 5417	Chas. Coonley	South Bend	59.5
5117	Cimmerman's Pharmacy	South Bend	30.0
5418 5672	Beam & Lynn	New Castle	88.2 70.1
'5677	A. W. Truitt	Noblesville Noblesville	44.5
5686	A. G. Baldwin A. W. Truitt J. C. Lindsey Red Cross Drug Store	Inton	86.0
5689 5699	Red Cross Drug Store	Tipton	92.7 88.4
5711	P. W. Green Dr. F. L. Sayler B. C. Robinson Model Drug Store	Elwood Elwood Alexandria	963
5713	B. C. Robinson	Alexandria	89.7 64.0
5719 · 5720	W. H. Bireley	Alexandria	64.0
5722	Bradley Bros	Alexandria Marion	83.5
5730	Evans Davis Drug Store Hildebrand & Ansley	Marion	84.2
5732 5735	Davis Drug Store	Marion Marion	62.2
5739	A. W. Leedy	Marion	84.2 83.5 84.2 62.2 98.1 92.7 59.1
5744	A. W. Leedy Jay Bros	Kokomo .	59.1
5751 5755	C. O. Scott T. H. Hubbard	Kokomo	97.6 81.0
5751 5755 5819	Lay & Hawthorne Meyer Bros Drug Co.	Kokomo . Indianapolis	38.0
5820	Meyer Bros Drug Co	Wasne	81.2 58.1
5833 5843	Geo. Loesche	Ft. Wayne Ft. Wayne Ft. Wayne	08.1 65.6
5853	Christian Bros. H. F. Beverforden. L. J. Zollinger.	Ft. Wayne	89.3
5867	L.J. Zollinger	t Waster	90.0
5876 5906	Ed. Mertz	Ft. Wayne Ft. Wayne Danville	65.6 89.3 90.0 89.3 81.2 88.1
5947 5952	F. D. Hohan J. W. West J. C. Marsh	Danville .	88.1
5952	J. C. Marsh	Danville	1 360.0
5957 5959	C. O. Haines	Danville	88.1 68.1
5961 5967	I E Dunlavy	Greencastle	68.1 94.3 96.2 96.2 88.6
5967 5969	W. W. Jones. Badger & Green	Greencastle	96.2
5969 5981	C Gottier	Greencastle	90.2 88 6
5983	W. Allen F. C. Dilley L. Herr F. W. Schultz O. K. Horner	Greencastle	∣ 80.0
5989 5992	F. C. Dilley	Brazil	75.0 87.5
5995	F. W. Schultz	Brazil	95.7
5996	C. W. Conditz O. K. Horner T. W. Inglehart H. L. Neidlinger J. A. Bichel Houseworth Bros.	Brazil	83.1
5998 6001	H. J. Neidlinger	Brazil	76.8
6015	J. A. Bichel	Goshan	65.0 98.7 93.1
6069	Houseworth Bros.	Elkhart. Scuth Bend	93.1
6122 6145	H. L. Spohn Senrich & Co. Samuel T. Applegate N. M. Mendenhall	South Bend	86.2 92.1
6149 6263	Samuel T. Applegate	South Bend South Bend	96.0
6263	N. M. Mendenhall Fred Keller	Brazil	83.7 53.1
6270 6283	Geo Reist	Brazil Terre Haute	56.2
6285	Geo Reist G. W. J. Hoffman C. Hampton City Hall Pharmacy	Terre Hante	56.2 88.1
6287 6289	City Hall Phases	Tarre Haute	82.5
6299	W. M. Henner	Terre Haute	65.0 72.5
6303	W. M. Henner R. H. Burns & Son	Terre Haute	61.9
6306 6308	Black & Cook Big Four Pharmacy	Terre Haute	68.7 90.6
6311		Terre Haute Terre Haute	57.1
6316	Otto C. Bastian	South Bend	95.6
6340 6360	R. R. Stanffer	Laporte Hammond	84.8
6367	M. Kolb	Hammond	80.0 96.8 68.7 45.0
6375	Jos. W. Weise	Hammond	68.7
6382 6403	Newland Drug Store	Valparaiso Valparaiso	45.0 95.0
6409	Peoples Drug Store	Plymouth	74.4 81.8
6116 6132	O. T. Dawson Otto C. Bastian F. W. Meisner B. R. Stanffer M. Kolb Jos. W. Weise Ben S. Wallick Newland Drug Store Peoples Drug Store L. Tanner Shadel's Drug Store W. Rinard	Plymouth	81.8
6489	W. Rinard	Plymouth Plymouth	86.2 88.1
	The second secon		

TINCTURE OF IRON-ILLEGAL-Continued.

Laboratory Number.	Retailer. Where Collected.		Per Cent. U.S.P. Strength.	
6446 6452 6466 6478 6492 6515 6528 6536 6551 6557 6567 6588 6595	Shore & Wilson Ed. W. Fieser G. D. Keith R. E. Murphy Blue Drug Store Thieband & Co. E. W. Lindeman Ed. M. Moran Otto Kloepfer L. H. Mattern Whiting Drug Co Bieknell & Co. Sommers Drug Co	Peru Peru Peru Michigan City Michigan City Michigan City Michigan City Whiting	71.2 44.3 70.6 51.2 87.0 95.0 73.7 96.6 71.2 76.8 93.7 72.5	

MISCELLANEOUS DRUGS.

We have devoted some time to the examination of drugs in the form of chemicals commonly carried in stock by druggists. The samples analyzed were for the most part of good quality.

Of the seven samples of potassium iodide all were pure and up to the standard. Of the nine samples of potassium chlorate five were pure and four below standard. Two of the three samples of zinc sulfate were pure. The third sample, although pure, was improperly labeled.

All the fourteen samples of boric acid were pure, as were the seven samples of sodium phosphate, the four samples of Rochelle salts, and single samples of tartaric and salicylic acids.

BORIC ACID-LEGAL.

Laboratory Number.	Retailers.	Where Collected.	Percentage Purity.	Remarks.
815 825 852 1150 1165 1177 1227 2154 2407 2784 2891 2991 2962 2968	C. Kightly A. Young John Laval & Son C. B. Woodworth & Co Ranke & Nussbaum Ireier & Bro Pellens & Lewis M. Kolb Anderson Drug Co Moore Bros F. H. Carter B. W. Stucky Weber Drug Co E. H. Wilson	Oakland City Evansville Ft. Wayne Ft. Wayne Ft. Wayne Ft. Wayne Hammond Anderson Tipton Indianapolis	100. 99.9 100. 100. 99.9 99.8 98.9 99.4 98.7 100. 99.2 99.9 100.	Pure. Pure. Pure. Pure. Pure. Pure. Pure. Pure. Pure. Pure. Pure. Pure. Pure. Pure. Pure.

POT. CHLORATE-LEGAL.

POI. UNLUKAIK-DEGAL.					
Laboratory Number.	Retailers.	Where Collected.	Remarks.		
1049 1125 1148 1162 2251	Fowler & Kerlin. J. C. Hutzell. O. B. Woodworth & Co. Ranke & Nusebaum. G. W. Hoffman	Wabash Ft. Wayne Ft. Wayne Ft. Wayne Logansport	Pure. Pure. Pure. Pure.		
	POT. CHLORATE-	ILLEGAL.	•		
1101 1913 1979 2368	Schaefer & Schaefer. Leonard & Bentz. Meyers Drug Store. Wells-Yaeger-Best Co.	Huntington	Not Pure. Not Pure. Not Pure. Not Pure.		
	SODA PHOSPHAT	E—LEGAL.			
770 805 900 1038 1082 1224 3842	S. F. Clapp. J. N. Jones H. J. Schlaepfer R. E. Clark M. Kaylor Pellens & Lewis Gentry Drug Store	Washington Washington Evansville. Wabash Huntington Ft. Wayne Bloomington	Pure. Pure. Pure. Pure. Pure. Pure. Pure.		
	ROCHELLE SALT	S-LEGAL.			
1226 2083 2197 2422	Pellens & Lewis. Woodson & Willits W. C. Lestherman J. B. Wehrle	Ft. Wayne	Pure. Pure. Pure. Pure.		
	POT. IODIDE-I	LEGAL.			
963 974 994 1081 1180 1181 2657	Joe Haney Porter the Druggist Blue Drug Store M. Kaylor Dreier & Bro. Central Drug Store W. Cogswell	Peru Peru Peru Huntington Ft. Wayne Elkhart Biwood	Pure. Pure. Pure. Pure. Pure. Pure.		
	ZINC SULFATE-	-LEGAL.			
901 1083 1225	H. J. Schlsepfer	Evansville	Pure. Pure but improperly labeled. Pure.		
	SALICYLIC ACID-	-LEGAL.			
849	John Laval & Son	Evansville	Pure.		

PRECIPITATED SULPHUR-ILLEGAL.

Laboratory Number.	Retailer.	Where Collected.	Per Cent. or Sulphur.	Per Cent. of Calcium Sulfate.	Remarks.
715 780 836 866 880 978 1095 1161 1181 1822 1878 1894 1911 1995 2049 2183 2706 4143	I. J. Biggs	Evansville Evansville Peru Huntington Ft. Wayne Auburn Auburn Elkhart Elkhart Elkhart Elkhart South Bend	51.3 54.1 51.9 51.5 51.5 51.5 53.6 49.8 54.0 61.0 751.8 51.4 54.1 54.1 54.1 54.1 55.1	48.9 48.1 48.9 48.5 48.5 46.4 50.27 46.0 49.3 48.2 48.6 45.9 48.2	Adulterated. Adulterated.

TARTARIC ACID-ILLEGAL.

Laboratory Number.	Retailer.	Where Collected.	Remarks.
2356	J. D. Bartlett	Lafayette	Sodium sulfate present. Adulterated.

INSPECTION OF GROCERY STORES, MARKETS AND SLAUGHTER HOUSES.

Freedom from adulteration is an important requisite in foods. It is of even greater importance that the foods be handled in a cleanly manner, protected from dirt and flies, and kept from the outside contamination that is often more to be feared than mere adulteration. Proper care of stores and markets can only be secured at the price of eternal vigiliance of the health officer or food inspector. Several cities of the State, notably Indianapolis, Crawfordsville, Ft. Wayne and Columbus, through local inspectors have done much to abolish filthy conditions and have secured reasonably satisfactory results. The State Food Inspectors have made note of the conditions of the stores and markets which they visited during the summer of 1906. Their instructions were

to note the general condition of the stores as to cleanliness, the way in which stock was cared for, as to protection from flies, dirt, etc., the condition of the rear room or store room in the back, and the condition of the refrigerator, taking special pains to notice its odor and appearance. The reports handed in by inspectors are given below:

INDIANAPOLIS.

Minnesota Grocery Co., 1037 E. Washington. Inspected August 21, 1906. Floor clean; rear clean; dried fruit wormy; other goods satisfactory.

Carter & Schober, 911 E. Washington. Inspected August 21, 1906. Floor clean; refrigerator clean and free from odor.

Henry Prange, 620 E. Washington. Inspected August 21, 1906. Floor and wall clean; goods satisfactory.

Harrig's Grocery, 617 E. Washington. Inspected August 21, 1906. Floors and wall clean; goods satisfactory.

Frank Lindeman, 410 E. Washington. Inspected August 21, 1906. Floor clean; goods and rear room rather dirty.

Standard Grocery, 358 E. Washington. Inspected August 21, 1906. Floor clean; rear satisfactory.

Court House Grocery, corner Washington and Alabama. Inspected August 21, 1906. Floor clean; goods clean; meats rather dirty and mussy.

Chas. H. Rinne, 344 W. Washington. Inspected August 21, 1906. Floor, goods and refrigerator clean.

D. Dugan, 411 W. Washington. Inspected August 21, 1906. Floor clean; goods dirty.

Day's Aurora Tea Store. Inspected August 21, 1906. Floor clean; goods dirty.

Chas. Schwier, 1016 E. Washington. Inspected August 21, 1906. Floor dirty; refrigerator filthy; uses newspapers to wrap bread, etc.

John Spier, 940 E. Washington. Inspected August 21, 1906. Floor and goods clean.

- I. Prince, 225 Massachusetts avenue. Inspected August 22, 1906. Goods dirty; floor dirty; refuse in rear; fly specks everywhere.
- R. M. Mueller, corner Delaware and New York streets. Inspected August 22, 1906. Floors and goods in excellent condition.

Consumer's Grocery Co., 305 Massachusetts avenue. Inspected August 22, 1906. Goods in satisfactory condition; rear part of store dirty; dead files thick.

- C. W. Verbarg, 539 Massachusetts avenue. Inspected August 22, 1906. Goods and floor clean; refrigerator clean.
- J. Sutphen, 531 Massachusetts avenue. Inspected August 22, 1906. Floor clean; goods rather dirty.
- F. Stahlut, 547 Massachusetts avenue. Inspected August 22, 1906. Floor and goods clean.

Frank Gross, 642-644 Massachusetts avenue. Inspected August 22, 1906. Excellent condition.

Wm. Ball, 940 Massachusetts avenue. Inspected August 22, 1906. Floor clean; walls and goods dirty and fly specked.

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- J. H. Kahn, 901 Massachusetts avenue. Inspected August 22, 1906. Floor, goods and refrigerator clean.
- A. A. Scott, 870 Massachusetts avenue. Inspected August 22, 1906. Floor clean; goods dirty.

Standard Grocery Co., 766 Massachusetts avenue. Inspected August 22, 1906. Floor and goods clean; refrigerator dirty.

Thos. Nevens, 735 Massachusetts avenue. Inspected August 22, 1906. Everything sticky and dirty; filthy.

- N. A. Moore, corner Illinois and Ohio streets. Inspected August 23, 1906. Excellent condition; goods, floor and walls very clean; refrigerator clean and sweet.
- M. C. Shea & Co., 219-223 N. Illinois street. Inspected August 23, 1906. Floor clean; refrigerator clean; rear room very clean.

Stone & Bussey, 503 N. Illinois street. Inspected August 23, 1906. Floor clean; goods clean; refrigerator satisfactory; rear part rather dirty.

J. M. Carvin & Son, 606 N. Illinois street. Inspected August 23, 1906. Goods, floor and rear clean.

Chas. Railsback, 738 N. Illinois street. Inspected August 23, 1906. Goods fairly clean but fly specked; floor rather dirty.

P. J. Ryan, 843 N. Illinois street. Inspected August 23, 1906. Goods in satisfactory condition; floor clean.

Con. Bauer, corner Capitol and Indiana avenue. Inspected August 23, 1906. Store fairly clean; refrigerator smeary and sticky.

W. A. Schofield, 1516 Central avenue. Inspected August 23, 1906. Floors and goods clean; refrigerator satisfactory.

Purfeerst & Miller, 1601 N. Alabama street. Inspected August 23, 1906. Floors clean; goods in good condition; refrigerator in excellent shape.

M. Clifford, 225-227 E. Sixteenth street. Inspected August 23, 1906. Floors clean and goods in satisfactory condition.

Glick & Shane, corner Sixteenth and Illinois streets. Inspected August 23, 1906. Floor, goods and refrigerator clean.

- C. F. Volkening, 1301 N. Illinois street. Inspected August 23, 1906. Floor clean; goods in fairly good condition; refrigerator fair.
- A. W. Berryhill, 1003-1005 N. Illinois street. Inspected August 23, 1906. Floor, goods and refrigerator clean.

Columbia Grocery Co., corner Illinois and Market streets. Inspected August 23, 1906. Floor, goods and refrigerator clean.

W. Y. Heller, 1303 Oliver avenue. Inspected August 24, 1906. Floor and goods clean; refrigerator in excellent condition.

Grubb & Co., 1306 Oliver avenue. Inspected August 24, 1906. Floor and goods clean; refrigerator ill smelling.

Carl Gising, 1267 Oliver avenue. Inspected August 24, 1906. Floor clean; goods in satisfactory condition; refrigerator clean.

E. A. Allen, 1236 Oliver avenue. Inspected August 24, 1906. Goods and floor clean.

Duncan & McJenkins, 1239 Oliver avenue. Inspected August 24, 1906. Goods in good condition; refrigerator clean.

C. W. Dill, 1230 Oliver avenue. Inspected August 24, 1906. Goods, floor and refrigerator clean.

Martin & Anderson, 1133 Oliver ayenue. Inspected August 24, 1906. Goods, floor and refrigerator clean.

C. L. Schindler, 1081 Oliver avenue. Inspected August 24, 1906. Floor clean; goods clean; refrigerator and meat satisfactory.

Geo. Bredewater, 1031 Oliver avenue. Inspected August 24, 1906. Floor, refrigerator and goods clean.

Schooler & Goldsberry, 2703 College avenue. Inspected August 24, 1906. Goods clean; floor clean; refrigerator satisfactory; place in excellent condition.

Gosney Bros., 2713 Ashland avenue. Inspected August 24, 1906. Floor and goods clean; rear part rather dirty.

H. E. Gaddis, 2403 College avenue. Inspected August 24, 1906. Floor, goods and refrigerator clean.

Beckerich Bros., 2128 College avenue. Inspected August 24, 1906. Goods and floor clean; refrigerator satisfactory.

Robt. Keller, 1076 S. East street. Inspected August 25, 1906. Goods, floor and refrigerator clean.

R. Freund & Co., 1033 S. East street. Inspected August 25, 1906. Goods and floor satisfactory; refrigerator clean.

John Stevens, 501 Buchanan street. Inspected August 25, 1906. Floor and goods dirty; rear part dirty; open buckets of preserved fruits have flies in them.

M. Roth, 933 S. East street. Inspected August 25, 1906. Refrigerator clean; satisfactory.

F. T. Meyer & Co., 802-806 S. East street. Inspected August 25, 1906. Floor clean; refrigerator satisfactory.

H. E. Schortemeier, 602 S. East street. Inspected August 25, 1906. Floor clean; goods fair; refrigerator fairly clean.

Geo. Amt, 353 Virginia avenue. Inspected August 25, 1906. Goods and floor clean; refrigerator clean.

F. E. George, 1110 Shelby street. Inspected August 27, 1906. Goods and floor clean.

Enterprise Grocery, 1058 Virginia avenue. Inspected August 27, 1906. Floor, goods and refrigerator clean.

Cook & Co., 1036 Virginia avenue. Inspected August 27, 1906. Floor and goods clean; refrigerator satisfactory.

Arnholter Bros., 948 Virginia avenue. Floor and goods clean; refrigerator clean.

- C. Behnke, 840 Virginia avenue. Inspected August 27, 1906. Goods and floor clean; rear excellent.
- C. H. & E. H. Schrader, 803 Virginia avenue. Inspected August 27, 1906. Floor and goods excellent; rear clean.

Neph. King, 738 Virginia avenue. Inspected August 27, 1906. Goods and floor clean; refrigerator clean.

- J. H. Rothert, 649 Virginia avenue. Inspected August 27, 1906. Goods and floor clean; rear clean.
- C. Douglas, 636 Virginia avenue. Inspected August 27, 1096. Goods and floor clean; rear satisfactory.

Hammond & Pasquier, 613 Virginia avenue. Inspected August 27, 1906. Goods, floor and refrigerator clean.

- S. E. Woolensnider, 601 Virginia avenue. Inspected August 27, 1906. Floor, goods and refrigerator clean.
- Mrs. N. Vinci, 310 Virginia avenue. Inspected August 27, 1906. Floor clean; goods fly specked.
- J. H. Madden, 308 Virginia avenue. Inspected August 27, 1906. Floor, goods and refrigerator clean.

Peter Liehr, 433 N. Davidson street. Inspected August 28, 1906. Goods, floor and refrigerator clean.

- J. C. Thomas, corner Noble and Michigan streets. Inspected August 28, 1906. Goods and floor clean; refrigerator satisfactory.
- H. E. Schortemeier, 640 New York street. Inspected August 28, 1906. Goods and floor clean.
- W. M. Kriel, 301 N. Noble street. Inspected August 28, 1906. Floor and goods clean; refrigerator clean.
- R. Brattain, 770 W. New York street. Inspected August 28, 1906. Floor, goods and refrigerator clean.
- H. G. Arszman, 443 W. Ohio street. Inspected August 28, 1906. Floor, goods and refrigerator clean.

FRANKLIN, IND.

- F. N. LaGrange. Inspected August 30, 1906. Goods and floor clean; rear very clean.
- H. C. Strickler & Son. Inspected August 30, 1906. Goods and floor in excellent condition.
 - L. H. Dunlap. Inspected August 30, 1906. Goods and floor clean.
- J. A. Schmith. Inspected August 30, 1906. Goods clean; floor clean; bad odor from rear.
 - H. N. Dunlap. Inspected August 30, 1906. Goods and floor clean.
 - A. A. Whaley. Inspected August 30, 1906. Goods and floor clean.
 - J. R. Fleming. Inspected August 30, 1906. Goods and floor clean.

EDINBURG.

Chupp Bros. Inspected August 30, 1906. Floor and goods clean; excellent condition.

Maley & Hyde. Inspected August 30, 1906. Floor and goods clean; rear part clean.

- F. Winterberg. Inspected August 30, 1906. Floor and goods clean; excellent condition.
- C. A. Mutz. Inspected August 30, 1906. Floor and goods clean; rear clean.
- G. M. Carvin. Inspected August 30, 1906. Floor and goods clean; rear of store satisfactory.

Wells Bros. Inspected August 30, 1906. Refrigerator clean.

COLUMBUS.

- H. J. Tooley. Inspected August 31, 1906. Floor and goods clean.
- J. B. Joy, 314 Third street. Inspected August 31, 1906. Floor and goods clean; meat rather dirty.

Weekley & Brown, 306 Third street. Inspected August 31, 1906. Floor and goods clean; rear satisfactory.

John Vorwald, 302 Third street. Inspected August 31, 1906. Floor and goods clean.

Knight & McLain, 240 Jackson street. Inspected August 81, 1906. Floor and goods clean.

Rethwitch & May, 231 Washington street. Inspected August 31, 1906. Goods and floor clean.

Jos. Newsom & Son, 414 Fourth street. Inspected August 81, 1906. Floor clean; goods dirty.

Frohman Bros., 434 Fourth street. Inspected August 31, 1906. Floor and goods clean.

H. L. Gaines, Postoffice block. Inspected August 31, 1906. Floor and goods in excellent condition.

Geo. Winans, 531 Washington street. Inspected August 31, 1906. Floor and goods clean; garbage in rear smells badly.

- J. V. Hughes, 521 Washington street. Inspected August 31, 1906. Floors and goods in satisfactory condition; rear clean.
- J. F. Lowe & Co., 426 Fifth street. Inspected August 31, 1906. Floor and goods clean.
- A. Mathi, 1519 Seventeenth street. Inspected August 31, 1906. Goods and floor clean.

Von Amgis Grocery, corner Tenth and Sycamore streets. Inspected September 1, 1906. Floor and goods in good condition.

The Sycamore Grocery, 714 Sycamore street. Inspected September 1, 1906. Floor and goods satisfactory.

MUNCIE.

- H. C. Adams, 515 S. Walnut street. Inspected September 5, 1908. Goods and floor satisfactory; rear very clean.
- C. A. Cropper, 510 S. Walnut street. Inspected September 5, 1906. Everything in excellent condition.

Ed Goeble & Co., 416 8. Walnut street. Inspected September 5, 1906. Floor and goods clean; refrigerator clean.

H. W. Jones, 217 S. Walnut street. Inspected September 5, 1906. Floor and goods clean.

J. R. Guthrie, corner High and Main streets. Inspected September 5, 1906. Floor and goods clean.

Xenia Peterson, corner High and Washington streets. Inspected September 5, 1906. Floor and goods in good condition.

White & Haines, corner High and Washington streets. Inspected September 5, 1906. Floor and goods clean.

A. B. Phillips, 108 W. Washington street. Inspected September 5, 1906. Floor and goods clean.

W. W. Trullender, 118 N. Walnut street. Inspected September 5, 1906. Floor and goods clean; rear clean.

Sterling Cash Grocery, corner Jefferson and Main streets. Inspected September 5, 1906. Goods, floor and refrigerator clean.

Lake Carey, 305 E. Main street. Inspected September 5, 1906. Goods and floor clean.

- T. Bryan & Son, 325 E. Main street. Inspected September 5, 1906. Floor and goods clean; rear rather dirty.
- H. G. Mauzy & Co., 405 E. Main street. Inspected September 5, 1906. Floor and goods clean.
- W. R. Wright, E. Main street. Inspected September 5, 1906. Goods, floor and rear clean.
- Scott & Yingling, 121 E. Charles street. Inspected September 5, 1906. Floor and goods clean.
- E. L. Addison, corner High and Jackson streets. Inspected September 5, 1906. Floor and goods clean.
- E. S. Secrest, 117 W Charles street. Inspected September 6, 1906. Floor and goods clean; rear satisfactory.
- H. G. Krull, corner Kirby avenue and Monroe street. Inspected September 6, 1906. Floor, goods and rear clean.

Sam Moore, Kirby avenue. Inspected September 6, 1906. Floor and goods clean; meats fairly clean.

ANDERSON.

Norris, 1006 Main street. Inspected September 7, 1906. Floor and goods clean.

- B. F. Timmons, 937 Main street. Inspected September 7, 1906. Floor and goods clean.
- Geo. W. Hadley, 926 Main street. Inspected September 7, 1906. Floor clean; goods clean; refrigerator clean.
- J. L. Phillips, North Side Square. Inspected September 7, 1906. Floor and goods clean; refrigerator clean.

Masters & Shackford. 22 W. Eighth street. Inspected September 7, 1906. Floor and goods clean; refrigerator excellent; ill smelling chicken coops in rear.

Madison & Son, 33 W. Eighth street. Inspected September 7, 1906. Floor, goods and refrigerator clean.

W. H. Wood, 1010 Meridian street. Inspected September 7, 1906. Floor and goods clean; rear very clean.

Geo. W. Hadley, 1017 Meridian street. Inspected September 7, 1906. Floor and goods clean; refrigerator satisfactory.

Masters & Shackelford, 1031 Meridian street. Inspected September 7, 1906. Floor and goods clean; refrigerator excellent.

Brown Pettit, 1109 Meridian street. Inspected September 7, 1906. Floor and goods clean.

Mike Graney. Inspected September 7, 1906. Floor, goods and refrigerator clean.

Yellow Front Grocery, 1210 Meridian street. Inspected September 7, 1906. Floor and goods clean; refrigerator rather dirty.

C. P. Durham, 1117 Main street. Inspected September 7, 1906. Floor and goods clean; refrigerator fairly clean.

Elliot & Son, 22 W. Fourteenth street. Inspected September 7, 1906. Floor and goods clean.

Fair View Grocery, 603 W. Fourteenth street. Inspected September 7, 1906. Floor and goods clean; ill smelling chicken coops.

NOBLESVILLE.

- Craig & Hayes, 13 S. Ninth street. Inspected September 11, 1906. Goods, floor and rear clean.
- A. D. Couden, 15 S. Ninth street. Inspected September 11, 1906. Goods and floor in excellent condition; rear clean.
- H. Deck, 33 S. Ninth street. Inspected September 11, 1906. Goods and floor clean; refrigerator clean.

Caylor's. Inspected September 11, 1906. Floor and goods clean; rear satisfactory.

L. W. Wild, Ninth street. Inspected September 11, 1906. Floor clean; cakes covered with syrup exposed to the flies.

Carlin & Moss. Inspected September 11, 1906. Floor and goods in excellent condition.

Caylor & Trissel. Inspected September 11, 1906. Floor and goods clean; refrigerator satisfactory.

Applegait & Barber, W. Logan street. Inspected September 11, 1906. Floor and goods clean; rear excellent.

TIPTON.

Haynes & Shuck. Inspected September 11, 1906. Floor, goods and rear clean.

W. N. McGraw. Inspected September 11, 1906. Floor and goods clean; rear satisfactory.

Ramsey Bros. Inspected September 11, 1906. Floor, goods and rear clean.

Kirby & Winders. Inspected September 11, 1906. Floor, goods and rear clean.

Hash & Matherly. Inspected September 11, 1906. Floor and goods clean; rear satisfactory.

M. Bath. Inspected September 11, 1906. Floor and goods clean.

ELWOOD.

Cavan's. Inspected September 12, 1906. Floor and goods clean; rear clean.

Star Grocery. Inspected September 12, 1906. Floor, goods and rear clean.

F. Aledndorf. Inspected September 12, 1906. Floor, goods and refrigerator clean.

Bicknell & Mahan. Inspected September 12, 1906. Floor, goods and refrigerator clean.

ALEXANDRIA.

- N. DePoy. Inspected September 12, 1906. Floor and goods clean; rear clean.
- J. L. Grider. Inspected September 12, 1906. Floor, goods and rear clean.

MARION.

G. B. Campbell, 321 Adams street. Inspected September 12, 1906. Floor and goods clean.

Swayzee's Market, 120-124 S. Washington street. Inspected September 12, 1906. Floor and goods clean; rear clean.

Boshorne & Marrone, 116 N. Third street. Inspected September 12, 1906. Floor and goods clean.

A. F. Norton, 205 N. Third street. Inspected September 12, 1906. Floor and goods clean; meats passable.

G. W. Day & Co., 219 N. Third street. Inspected September 12, 1906. Floor, goods and refrigerator clean.

Economy Market Co., corner Fifth and Washington streets. Inspected September 12, 1906. Floor and goods clean; meats excellent.

Hiatt & Lenferty. Inspected Septembr 12, 1906. Floor and goods clean; rear excellent.

KOKOMO.

J. P. Bireley & Co. Inspected September 14, 1906. Floor, goods and rear clean.

McKee & Rule, 28 E. Walnut street. Inspected September 14, 1906. Floor and goods clean; refrigerator clean.

Sulavan's Pure Food Stores. Inspected September 14, 1906. Floors, goods and refrigerator clean.

M. F. Hall, 1 N. Buckeye. Inspected September 14, 1906. Floor and goods clean; rear clean.

McKaffrey & Co. Inspected September 14, 1906. Floor, goods and rear clean.

William Bros. Inspected September 14, 1906. Floor and goods clean; refrigerator satisfactory.

Philip Bernd. Inspected September 14, 1906. Floor and goods cleau; rear passable.

SOUTH BEND.

I. Miller. Inspected October 2, 1906. Floor clean; refrigerator in good condition, butter, milk and meat separate; store in excellent condition.

Joe Loos. Inspected October 2, 1906. Floor clean; other conditions good.

De Wall Grocery. Inspected October 2, 1906. Back end of store dirty; no odor in refrigerator.

Zoller-Mertz. Inspected October 2, 1906. General conditions good; refrigerator satisfactory; butter, milk and meats separate.

Barnett Bros. Inspected October 2, 1906. Sawdust on floor; refrigerator in good condition.

The Blake Grocery Co. Inspected October 2, 1906. Floor clean; goods and refrigerator in good condition.

J. M. Sartin. Inspected October 2, 1906. Floor and shelves dirty; store in a mussy condition.

Chas. W. Crofoot. Inspected October 2, 1906. Floor and shelves clean; goods clean.

Brodbeck Bros. Inspected October 2, 1906. Floor clean; refrigerator clean.

J. E. Williams Bros. Inspected October 2, 1906. Floor clean; shelves clean; store in good condition.

Brown Grocery. Inspected October 2, 1906. Floor dirty and mussy; no refrigerator.

J. A. McCollough. Inspected October 2, 1906. Floor dirty; shelves clean; rear room satisfactory.

Jos. Sommers, Meat Market. Inspected October 2, 1906. Floor dirty and greasy; refrigerator ill smelling.

Langs Grocery. Inspected October 2, 1906. Good condition; clean. Kirks Market. Inspected October 2, 1906. Sawdust on floor; refrigerator clean.

- A. L. Shropp. Inspected October 2, 1906. Floor slightly dirty, otherwise store in good shape.
- F. W. Mueller. Inspected October 2, 1906. Floor, shelves, back room and refrigerator clean.

Chas. Wagner. Inspected October 2, 1906. Floor, shelves and rear room clean and in good condition.

Muelier-Johnson. Inspected October 2, 1906. Floor and refrigerator clean; rear room satisfactory.

Fred Rostister. Inspected October 2, 1906. Floor and shelves clean; refrigerator satisfactory, meat, butter and milk separate.

Hiram Bishop. Inspected October 2, 1906. Floor, shelves, rear room and refrigerator clean.

D. N. Becker. Inspected October 2, 1906. Floor dirty; shelves and refrigerator clean.

Bon Ton Grocery. Inspected October 2, 1906. Floor dirty; shelves and refrigerator clean.

Wesley Brown. Inspected October 2, 1906. Floor clean; refrigerator in good condition.

Raymon DeVoss. Inspected October 2, 1906. Floor dirty; shelves mussy; refrigerator satisfactory.

Edward Doane. Inspected October 2, 1906. Floor clean; back room and refrigerator clean.

A. Harper. Inspected October 2, 1906. Floor dirty; general conditions good.

Oliver Keene. Inspected October 2, 1906. Everything in good condition.

Post Grocery Co. Inspected October 2, 1906. Floor clean; refrigerator clean.

Scott & Brady. Inspected October 2, 1906. Floor dirty; shelves mussy.

W. Livengood. Inspected October 2, 1906. Floor clean; rear room and refrigerator clean.

Thomas Grocery Co. Inspected October 2, 1906. Front of store in good condition; rear room dirty.

FT. WAYNE.

Ft. Wayne Grocery Co. Inspected September 25, 1906. Front of store clean; rear very dirty; meat market at side of grocery, sawdust on floor in front; rear filthy and greasy; refrigerator ill smelling.

Amos R. Walter. Inspected September 25, 1906. Floor dirty; refrigerator dirty; butter, milk and meats separate; general conditions good.

- F. T. Mensch. Inspected September 25, 1906. Store clean; floors and shelves clean; refrigerator satisfactory.
- G. H. Buck & Son. Inspected September 25, 1906. Store in satisfactory condition.

GOSHEN.

- F. B. Hoffman. Inspected September 27, 1906. Store clean; refrigerator satisfactory.
- M. A. Cornell. Inspected September 27, 1906. Floor and shelves in good condition; rear room and cellar clean.
- W. W. Poyser. Inspected September 27, 1906. Floor dirty; shelves clean; refrigerator in good condition.

Chicago Fair. Inspected September 27, 1906. Refrigerator clean and sweet; floors and shelves dirty.

- E. C. Murphy. Inspected September 27, 1906. Store very mussy; back room filthy, trash all around.
- A. J. Bickel. Inspected September 27, 1906. Everything in good condition.
- C. F. Bickel. Inspected September 27, 1906. Floors, rear room and refrigerator clean.
- H. F. Philippi. Inspected September 27, 1906. Store in good condition.

Paul Bros. Inspected September 27, 1906. Floor clean; general condition clean.

Golden & Gemberling. Inspected September 27, 1906. Floor clean; store in good condition; refrigerator clean.

F. M. Swinehart. Inspected September 27, 1906. Floor and refrigerator clean; rear room in good condition.

Lilley & Sons. Inspected September 27, 1906. Floor and back room clean.

Robbins-Swinheart. Inspected September 27, 1906. Floor dirty, otherwise in good condition.

- J. J. Hoffman. Inspected September 27, 1906. Floor and shelves clean; refrigerator satisfactory.
- W. A. Griffin. Inspected September 27, 1906. Floor dirty; shelves in good condition; rear room dirty; slight odor in refrigerator.

Meyers Meat Market. Inspected September 27, 1906. Both front and rear room clean: refrigerator sweet.

Frank Ludwig. Inspected September 27, 1906. Floor and refrigerator clean.

Herman Bros. Inspected September 27, 1906. Floor clean; refrigerator in good condition.

Boyer Greiner. Inspected September 27, 1906. Floor clean.

Shick Bros., Meat Market. Inspected September 27, 1906. Everything clean.

- C. A. DeLong. Inspected September 27, 1906. Floor and refrigerator clean; rear room dirty.
- W. A. Paul Co. Inspected September 27, 1906. Floor clean; general conditions good.

LAPORTE.

Huscre Grocery Co. Inspected October 4, 1906. Floor and stock dirty; shelves mussy.

E. C. Hall & Bro. Inspected October 4, 1906. Everything in good condition.

Woolf Grocery Co. Inspected October 4, 1906. Floor clean; general condition good.

- J. M. Strong. Inspected October 4, 1906. Floor clean; no refrigerator; meat hanging on wall.
- C. F. Miller & Co. Inspected October 4, 1906. Floor dirty; shelves clean; refrigerator satisfactory.
- J. A. Schumm. Inspected October 4, 1906. Floor and rear room clean; refrigerator in good condition.

Kleinfeld & Khann. Inspected October 4, 1906. Floor and stock dirty.

J. S. Minich. Inspected October 4, 1906. Floor and shelves clean; refrigerator in good condition.

Boyd W. Grandstaff. Inspected October 4, 1906. Floor, shelves and ice box clean.

Booserman Grocery. Inspected October 4, 1906. Floor dirty, otherwise in good condition.

Palm Bros., Meat Market. Inspected October 4, 1906. Sawdust on floor; refrigerator sweet and clean.

MICHIGAN CITY.

Chas. Romel. Inspected October 5, 1906. Floor and stock clean; refrigerator in good condition.

J. B. Van Pellen. Inspected October 5, 1906. Floor dirty; goods and refrigerator clean.

Henry Finckie. Inspected October 5, 1906. Floor dirty; stock clean; refrigerator slightly ill smelling.

Sam Hunziker. Inspected October 5, 1906. Floor clean; shelves clean; refrigerator clean.

G. M. Edwards. Inspected October 5, 1906. Everything in good condition.

Frank E. Gielow. Inspected October 5, 1906. Floor and stock clean.

A. H. Lohsand Grocery. Inspected October 5, 1906. Floor and shelves clean; rear room satisfactory.

Fred J. Krueger. Inspected October 5, 1906. Floor and rear room dirty.

L. B. Ashton. Inspected October 5, 1906, Floor and stock clean; rear room in good condition.

Ray, Ebert & Co. Inspected October 5, 1906. Floor and stock clean; refrigerator in good condition.

Gillden Bros. Inspected October 5, 1906. Floor dirty; stock clean and in good condition; rear room and refrigerator clean.

- M. E. Clark. Inspected October 5, 1906. Floor, stock and refrigerator clean.
 - G. Cruse & Co. Inspected October 5, 1906. Floor and goods clean.
- L. W. Muse. Inspected October 5, 1906. Floor dirty; goods clean; rear room dirty.

Ernest Arch. Inspected October 5, 1906. Floor and goods clean; refrigerator satisfactory.

D. A. Keading. Inspected October 5, 1906. Floor dirty; stock and refrigerator in good condition.

WHITING.

Braidich Bros. Inspected October 8, 1906. Floor dirty; rear room, shelves and stock dirty.

Heyden Place Co. Inspected October 8, 1906. Floor and shelves clean.

M. A. Balla Grocery. Inspected October 8, 1906. Sawdust on floor; refrigerator satisfactory.

Jas. Allison. Inspected October 8, 1906. Floor clean; shelves clean; in good condition.

The Whiting Market Store. Inspected October 8, 1906. Floor and goods clean; refrigerator clean.

HAMMOND.

- J. J. Austin. Inspected October 8, 1906. Floor and refrigerator clean.
- H. T. Burk. Inspected October 8, 1906. Floor clean; stock clean; meat market in rear; refrigerator satisfactory; rear room clean.
- Wm. A. Berriger. Inspected October 8, 1906. Floor and shelves clean; meat market in rear, sawdust on floor; refrigerator clean.
- M. Maginot. Inspected October 8, 1906. Floor and stock clean; general conditions good.
- M. Griswold. Inspected October 8, 1906. Floor and shelves clean; meat market in rear; refrigerator in good shape.
- S. A. Southack. Inspected October 8, 1906. Floor clean; stock dirty; shelves mussy; refrigerator fair.
- Mrs. Bertha Grimes. Inspected October 8, 1906. Floor clean; stock and refrigerator dirty.
- H. W. Warwick & Co. Inspected October 8, 1906. Floor clean; stock clean; refrigerator dirty.
- A. H. Bunde. Inspected October 8, 1906. Floor dirty; stock, rear room and refrigerator clean.
- F. R. Nason. Inspected October 8, 1906. Floor and refrigerator clean.
- M. M. Koch. Inspected October 8, 1906. Floor, stock and rear room clean.

Hursh & Warwich. Inspected October 8, 1906. Floor dirty; stock and refrigerator clean; rear room mussy.

Hammond Meat Market. Inspected October 8, 1906. Floor, refrigerator and rear room clean.

VALPARAISO.

- C. E. Shield. Inspected October 9, 1906. Floor dirty; stock clean.
- Wm. Gossill, Meat Market. Inspected October 9, 1906. Sawdust on floor; refrigerator clean.
- W. C. Windle. Inspected October 9, 1906. Floor, stock and refrigerator clean.
- J. W. Seib, Meats. Inspected October 9, 1906. Sawdust on floor; refrigerator clean; rear room dirty.
- Leety & Sons. Inspected October 9, 1906. Floor clean; stock, refrigerator and rear room clean.
- F. Beyer. Inspected October 9, 1906. Floor and stock in good shape. Herrick & Herrick. Inspected October 9, 1906. Floor dirty; stock mussy.

PLYMOUTH.

I. Miller. Inspected October 10, 1906. Floor clean; rear room and stock rather dirty.

Enterprise Grocery. Inspected October 10, 1906. Floor, rear room and stock clean.

- W. A. Beldon. Inspected October 10, 1906. Sawdust on floor; refrigerator and rear room clean.
- W. F. Sult: Inspected October 10, 1906. Floor, stock and rear room clean.
- A. M. Reaves. Inspected October 10, 1906. Floor clean; stock dirty; refrigerator and rear room dirty.
- Geo. Vinalls Grocery. Inspected October 10, 1906. Floor, stock and rear room clean.
 - L. J. Southworf. Inspected October 10, 1906. Floor and stock clean.

ROCHESTER.

Millic Grocery Co. Inspected October 12, 1906. Floor, stock, rear room and refrigerator clean.

W. H. Lowry Grocery. Inspected October 12, 1906.

Shore & Wilson. Inspected October 12, 1906. Floor, stock, refrigerator and rear room clean.

- L. E. Downey. Inspected October 12, 1906. Floor clean; stock and refrigerator in good shape.
- H. Brothers. Inspected October 12, 1906. Floor dirty; stock in fairly good shape; refrigerator clean.
- J. F. Kepler. Inspected October 12, 1906. Floor and stock clean; rear room dirty.
 - L. W. Davidson. Inspected October 12, 1906. Floor and stock clean.
- F. A. Kilmer. Inspected October 12, 1906. Floor dirty; stock clean; rear room clean.

PERU.

Kelly & Allman. Inspected October 12, 1906. Floor, stock and refrigerator clean.

B. F. Weimer. Inspected October 12, 1906. Floor, stock, refrigerator and rear room clean.

Woods & Vaner. Inspected October 12, 1906. Floor, stock, refrigerator clean.

E. A. Schram. Inspected October 12, 1906. Floor and stock clean.

Peru Mercantile Co. Inspected October 12, 1906. Floor dirty; stock clean.

Glennon Wendt. Inspected October 12, 1906. Floor, stock and refrigerator clean; rear room dirty.

- S. W. Smith. Inspected October 12, 1906. Floor, stock and rear room clean.
 - J. W. Miller. Inspected October 12, 1906. Floor dirty; stock mussy.
- F. I. Derberts. Inspected October 12, 1906. Floor dirty; stock and refrigerator clean; rear room floor dirty.
- W. T. Hanson. Inspected October 12, 1906. Floor, stock and refrigerator clean.

John Devine Grocery. Inspected October 12, 1906. Floor clean; stock dirty; meat market in rear of store; refrigerator clean.

Petty-Drums. Inspected October 12, 1906. Floor, shelves, stock dirty; meat market in rear; dirt around the refrigerator.

- J. D. Helderle. Inspected October 12, 1906. Floor clean; stock mussy; refrigerator fair.
- W. Petty Grocery. Inspected October 12, 1906. Floor dirty; stock and refrigerator clean.
- J. J. Glennon. Inspected October 12, 1906. Floor dirty; stock and rear room clean.

McCaffrey & Co. Inspected October 12, 1906. Floor clean; stock clean; meat market in rear.

MADISON.

L. Danner. Inspected October 6, 1906. Grocery in good condition; back shop satisfactory.

Bilz & Kalb. Inspected October 6, 1906. Meat market satisfactory: refrigerator clean.

Spaulding & Thomas. Inspected October 6, 1906. Sfore und rear room in good condition.

Gus Yunker Mest Market. Inspected October 6, 1906. In very satisfactory condition.

- J. F. Wells Grocery. Inspected October 6, 1906. Very satisfactory.
- J. W. Temperly Grocery. Inspected October 6, 1906. In very good condition.

Chas. M. Short Grocery. Inspected October 6, 1906. Everything in good condition.

JEFFERSONVILLE.

Best & Co., Grocery. Inspected October 6, 1906. In good condition. M. J. Kenor, Grocery. Inspected October 6, 1906. Grocery satisfactory; meats screened off.

NEW ALBANY.

- R. L. Grossheider, Grocery. Inspected October 6, 1906. In good condition.
- W. O. Davis, Grocery and Meats. Inspected October 6, 1906. Store in good condition; refrigerator foul.

DANVILLE.

- H. V. Hunt Grocery. Inspected September 28, 1906. Stock clean; in good condition.
 - J. R. Brien. Inspected September 28, 1906. In excellent condition.
- B. F. Howell & Son. Inspected September 28, 1906. Store in good condition.
- H. H. Mills. Inspected September 28, 1906. Stock clean; refrigerator satisfactory; floor dirty.
- J. M. Holman, Meat Market. Inspected September 28, 1906. Floor and refrigerator clean.
- J. L. Darnell, Grocery. Inspected September 28, 1906. In good condition.

GREENCASTLE.

Zeis & Co. Inspected September 27, 1906. Stock in good condition; general conditions poor; many flies.

Enterprise Department Store. Inspected September 27, 1906. Grocery department good.

Wm. Haspel, Meat Market. Inspected September 27, 1906. Very dirty; many flies; refrigerator dirty.

Egger & Cooper. Inspected September 27, 1906. Condition fair.

- C. H. Meikel. Inspected September 27, 1906. Condition good.
- J. C. Browning Grocery. Inspected September 27, 1906. Stock clean; meat department dirty.
- R. S. Cooper. Inspected September 27, 1906. Floor dirty; general conditions good: refrigerator in excellent condition.
 - T. E. Evans. Inspected September 27, 1906. Store in good condition.
- J. L. Peters Grocery. Inspected September 27, 1906. Grocery satisfactory; meat market in fair shape.
- W. Craig. Inspected September 27, 1906. Everything in good condition.
 - T. A. Moran. Inspected September 27, 1908. Good condition.
- E. C. Caldwell. Inspected September 27, 1906. Store and goods in fair condition.
 - C. H. Cook. Inspected September 27, 1906. Store in good shape.
 - W. H. Allen. Inspected September 27, 1906. Good condition.

BRAZIL.

Hudson & Hudson. Inspected September 27, 1906. Shop clean; refrigerator clean.

G. H. Jones & Co. Inspected September 29, 1906. Everything in good condition.

Jones & Co. Inspected September 29, 1906. Conditions very good in store; refrigerator only fair.

G. H. Jones & Co. Inspected September 29, 1906. Store very clean; refrigerator fairly clean.

Hudson Bros., West Side. Inspected September 29, 1906. Store and refrigerator clean; rendering department only fair.

- G. H. Jones & Co., 512 W. Main street. Inspected September 29, 1906. Store in excellent condition.
- G. H. Jones & Co., 702 Main street. Inspected September 29, 1906. Store and refrigerator clean.
- G. H. Jones & Co., 818 Main street. Inspected September 29, 1906. Store clean; refrigerator not very clean.
- M. C. Stewart. Inspected September 29, 1906. Refrigerator good; racks rather dirty.
- G. H. Jones & Co., Main street. Inspected September 29, 1906. Store and refrigerator very clean; racks rather dirty.
- G. H. Jones & Co., 18 N. Meridian street. Inspected September 29, 1906. Store clean; refrigerator fair.
- R. S. Stewart, 641 E. Main street. Inspected September 29, 1906. Store and refrigerator clean.

James Hunter Grocery. Inspected September 29, 1906. Store clean; stock good.

A. Comparon, 802 N. Vandalia. Inspected September 29, 1906. Store in fairly good condition.

Joseph Dascamps. Inspected September 29, 1906. In fair condition. Mc. Rulle, 255 N. Ashley street. Inspected September 29, 1906. Refrigerator very dirty; stock good.

M. C. Murphy, 565 E. Main street. Inspected September 29, 1906. Very good condition.

Chevallier Bros., 557 Main street. Inspected October 1, 1906. Condition fair.

Monarch Grocery. Inspected October 1, 1906. Everything in good shape.

- T. C. Cole, 515 E. Main street. Inspected October 1, 1906. Condition good.
- E. N. Evans, 212 E. Main street. Inspected October 1, 1906. Store clean; stock satisfactory.
- R. H. Bolin & Son, 217 E. Main street. Inspected October 1, 1906. Good.
- I. S. Easter Meat Market. Inspected October 1, 1906. Refrigerator fair; meats and groceries good.
 - J. A. Krider. Inspected October 1, 1906. Good condition.

Collier & Thompson. Inspected October 1, 1906. Store and stock fairly good.

Kinzan Bros. Inspected October 1, 1906. Conditions fair.

- 8. T. Gonter & Co. Inspected October 1, 1906. Good.
- J. A. Decker. Inspected October 1, 1906. Store fair; meat department dirty.
- Geo. Ostwalt. Inspected October 1, 1906. Store and stock in satisfactory condition.

Gibbons Bros. Inspected October 1, 1906. Good condition.

- J. Bogle. Inspected October 1, 1906. Everything in very good shape.
- A. W. Shafer. Inspected October 1, 1906. Good condition.

TERRE HAUTE.

- J. W. Maud. Inspected October 2, 1906. Very dirty junk shop and grocery combined.
 - P. O. Sullivan. Inspected October 2, 1906. Very dirty store.

Bauemeister Grocery. Inspected October 2, 1906. Fair condition.

Frank Smirtz, 113 Wabash avenue. Inspected October 2, 1906. Fairly clean; refrigerator new but dirty.

- W. H. Fink, 112 Wabash avenue. Inspected October 2, 1906. Conditions good.
- J. W. Hoff, 120 Wabash avenue. Inspected October 2, 1906. Very dirty shop; air foul; two dogs in shop.

H. C. Trowbridge, 119 Wabash avenue. Inspected October 2, 1906. Shop clean.

G. P. Willis, 128 Wabash avenue. Inspected October 2, 1906. Nice clean shop; racks in refrigerator dirty.

Jonas Strause, Wabash avenue. Inspected October 2, 1906. In fair condition.

E. A. Hollingsworth, Fourth and Cherry. Inspected October 2, 1906. Both grocery and meat market clean.

Wm. Fuhr, 212 S. Fourth street. Inspected October 2, 1906. In good condition.

- C. W. Nagel, 210 S. Fourth street. Inspected October 2, 1906. Store in good condition; refrigerator clean.
- B. S. Rockwood, 204 S. Fourth street. Inspected October 2, 1906. Everything clean and satisfactory.
- J. W. Brown. Inspected October 2, 1906. Conditions fair; refrigerator clean.
- W. H. Morris, Fifth and Ohio streets. Inspected October 2, 1906. Grocery and meat market clean; refrigerator clean.
- A. R. Norris, 417 Ohio street. Inspected October 2, 1906. Refrigerator clean; in fair shape.

Wright & King Co., 647 Wabash avenue. Inspected October 2, 1906. Both meat market and grocery in excellent condition.

- W. W. Kaufman, Seventh and Wabash avenue. Inspected October 2, 1906. Good condition.
- F. A. Brown. Inspected October 2, 1906. Meat market in good condition.
- J. B. Ryan, 802 Wabash avenue. Inspected October 2, 1906. Not much of a store.
- S. Bressette, Eleventh and Wabash avenue. Inspected October 2, 1906. Grocery and meat market satisfactory; refrigerator fairly clean.

Tine & Voight, 1141 Wabash avenue. Inspected October 2, 1906. Meat market fair; grocery in good condition; refrigerator dirty.

Geo. Burgets, 1209 Wabash avenue. Inspected October 2, 1906. Very clean; refrigerator excellent.

F. W. Hoff, 1300 Wabash avenue. Inspected October 2, 1906. In good condition.

Thos. G. Lowe, 1353 Wabash avenue. Inspected October 2, 1906. Store in fairly good shape.

- E. R. Pence, 1367 Wabash avenue. Inspected October 2, 1906. Grocery and meat market both satisfactory.
 - C. H. Clifton, 1513 Wabash avenue. Inspected October 2, 1906. Good.
- G. C. Baesler, 1404 Wabash avenue. Inspected October 2, 1906. Meat market very good.
- O. C. Hancock, 1529 Wabash avenue. Inspected October 2, 1906. Good condition.
- W. R. Scott, 530 S. Second street. Inspected October 2, 1906. Store clean; refrigerator dirty.

Nat Kemper, 530 S. Third. Inspected October 2, 1906. Good condition.

John C. Vendall, 1101 S. Eighth street. Inspected October 2, 1906. Store clean.

- J. T. McCullough, Ninth and College avenue. Inspected October 2, 1906. Store very clean; refrigerator exceptionally clean.
- H. H. Thomas, 1222 College avenue. Inspected October 2, 1906. Good condition.

Herndon Bros., College and Thirteenth. Inspected October 2, 1906. Store very clean.

Keplin & Kahane, 100 S. Thirteenth. Inspected October 2, 1906. Good condition.

B. Reemer, 465 S. Thirteenth. Inspected October 2, 1906. General conditions good.

L. T. Scott, 1328 Poplar street. Inspected October 2, 1906. Good.

Oedink Bros., 1326 Poplar street. Inspected October 2, 1906. Store satisfactory.

- J. F. Liehr, 1200 Poplar street. Inspected October 2, 1906. Goods and store clean.
- H. Valentine, 1123 Poplar. Inspected October 2, 1906. Meat market in good shape.
- H. Valentine. Inspected October 2, 1906. Grocery stock and store clean and in good condition.
- J. Van Duzer, 1101 Poplar. Inspected October 2, 1906. Conditions good.
- H. Handick, 1004 Poplar. Inspected October 2, 1906. Conditions fair.

John Dammershausen, Fifteenth and Liberty. Inspected October 2, 1906. Store in fairly good condition.

Fred Schanefeld. Fifteenth and Liberty. Inspected October 2, 1906. Store and stock in very good condition.

- O. Vokley, 1540 Liberty street. Inspected October 2, 1906. Everything satisfactory.
- J. B. Galliger, 1801 Liberty street. Inspected October 2, 1906. Store and stock clean; good.
- J. W. Fritz, Fourteenth and Locust. Inspected October 2, 1906. Meat market and grocery fair.

P. C. Noban, 835 N. Thirteenth street. Inspected October 2, 1906. Refrigerator clean; store fair.

Fritz C. Fry, Locust and Thirteenth. Inspected October 2, 1906. In fair condition.

C. S. Smith, 934 Locust. Inspected October 2, 1906. In fair condition.

Frank Byrne, 901 N. Eighth. Inspected October 2, 1906. Very good.

- G. W. Hess, 321 N. Ninth. Inspected October 2, 1906. In good condition.
- A. Ray & Co., 605 Tippecanoe street. Inspected October 2, 1906. Everything satisfactory.

Andy Rowe, 827 Sixth street. Inspected October 2, 1906. Store in fairly good condition.

- J. W. Rood. 614 Locust street. Inspected October 2, 1906. Store and stock in fair shape.
- J. H. Helmick, 830 N. Sixth. Inspected October 2, 1906. Both grocery and meat market good.
- H. S. Thomas, 402 Locust street. Inspected October 2, 1906. Very good condition.
- J. Pendigast, 1033 N. Fourth street. Inspected October 2, 1906. Grocery and meat market fair.
- J. P. Fagan, 400 N. Fourth street. Inspected October 2, 1906. This store is an excellent one.

John Formahlen, Fourth and Eighth avenue. Inspected October 2, 1906. In fairly good condition.

- R. D. Pierson, 302 Hancock. Inspected October 2, 1906. Fairly good.
- C. W. Ferguson, 2034 N. Third street. Inspected October 2, 1906. In good condition.

SLAUGHTER HOUSES.

Snyder's. Jeffersonville. Inspected October 6, 1906. Horrible condition of filth and stench; very old tumble-down buildings, impossible to clean; offal fed to hogs; slaughter house only, as carcasses are hauled away soon after killing; fat and tallow rendered in filthy kettle; entire surroundings could not be worse.

Wm. Haspel, Greencastle. Inspected September 26, 1906. This slaughter house is in a very dirty condition. The hides are salted down on the killing floor; the offal is thrown through a window to the ground where it is eaten by sickly looking hogs or left to decay. This pile is about a foot thick and ten feet in diameter. Flies go from the rotting refuse to the interior of the house, as no screens are in the building. They wash the house occasionally and at certain seasons of the year the stream which flows nearby overflows and floods the yard, house, etc., washing everything away. There are two other slaughter houses in Greencastle, both in fair condition, although not screened nor sanitarily kept.

F. H. Jones & Co., Brazil. Inspected September 29, 1906. This slaughter house is in very good condition; there are cement floors and the water supply is abundant for keeping the place clean.

Steward's Slaughter House, Brazil. Inspected September 29, 1906. This place is in a fair condition, although not screened. The temporary storage room was clean.

Terre Haute Abattoir & Stockyards Co. Inspected October 1, 1906. The surroundings of this place are very dirty and the platform where the meat is loaded on is unclean. The slaughtering rooms are in good condition, having a plentiful supply of water; there are no screens in the windows. The room where the fertilizer is made is in direct connection with both killing rooms. The manager promised to clean up and use screens, and the inspector recommended that the fertilizer room be separated by a partition from the rest of the plant. The cooling room was in excellent condition.

Valentine & Co., Terre Haute. Inspected October 1, 1906. This is a new slaughter house; conditions are good, although no screens are used and there are many flies. Manager promised to use screens; excellent cooling room.

Anderson Dressed Beef Co., Anderson. Inspected September 9, 1906. This slaughter house has rather good external appearance and consists of three rooms; the cooling room is fairly clean, although an odor is noticeable; the slaughtering room had considerable refuse on the floors; the rendering room is very filthy, the tanks being covered with grease and dirt, with refuse all around and the walls coated with dirt; a decided odor is noticeable in this room. The offal is fed to the hogs and they wallow in a pool of blood and water.

LABORATORY OF HYGIENE

REPORT

OF

Bacteriological and Pathological Division.

Year Ending October 31, 1906.

T. VICTOR KEENE, M. D., Superintendent. HELENE H. KNABE, M. D., Ass't Superintendent.

ADA SWEITZER,
Assistant.
(413)

CHARACTER OF WORK AND AIMS

OF THE

Bacteriological and Pathological Division

OF THE

STATE LABORATORY OF HYGIENE.

The practical work of this laboratory is the examination of samples of sputum, the examination of diphtheria cultures, the examination of samples of blood and the examination of curettings and other pathological specimens, to aid physicians in making diagnoses, to the end that the people may be benefited. It is obvious that if diagnosis of disease is made more accurate and made earlier, that more cures can be made and more lives saved by the medical art. It not infrequently happens in regard to diphtheria that the physicians of a neighborhood differ as to the diagnosis, some contending for diphtheria and others for tonsilitis or other forms of angina. In such instances, the laboratory can make accurate decision, which is a great point in the isolation and quarantine of the disease for the purpose of its control. In consumption, the microscopical examination of the sputum is of great importance, for frequently patients will not accept the clinical diagnosis of physicians, and then they do not observe the health rules for disease prevention, and go on spreading the disease. And again, in such instances, the patient is lost, because he neglects to apply proper methods of cure, but goes on taking medicine in the hope of relief.

Blood examinations to diagnose typhoid fever are at this time a necessity. This is because at certain stages of these maladies it is impossible for the clinician to make absolute diagnosis. As it is with diphtheria, so it is with typhoid, the unrecognized and

mild cases spread the infection. As for the differentiation of typhoid and malaria, it is true that in not a few instances this can be done in the laboratory only. At the Indiana Soldiers' Home a year ago and at Richmond in the summer of 1906, it was discovered through the laboratory that epidemics of typhoid prevailed, most of the cases being mild, but competent to spread the disease in virulent form. This discovery was of much importance in staying the further spread of the disease.

Examinations made are herein tabulated and summarized. The tables show total number of examinations, and results by counties, and are followed by summaries.

REPORT FROM THE DIVISION OF BACTERIOLOGY AND PATHOLOGY OF THE INDIANA STATE LABORATORY OF HYGIENE.

January.—A number of the specimens which appear in this month's report were examined during October, November and December, before the State Laboratory of Hygiene was formally established. Indeed, many of the physicians who had keenly felt the need of such an institution for a long time began to send specimens to the State Board of Health as soon as it became known that an appropriation had been made by the Legislature for this purpose.

BACTERIOLOGICAL EXAMINATIONS

	Positive.	Negative.	Total.
Sputum (tuberculosis)	69	72	141
Diphtheria	23	18	41
Blood (typhoid)	18	6	24

February.—We did not receive many specimens and were rather glad of it, because of the number of outfits for the collection of sputum, blood and diphtheria cultures which were to be sent to all parts of the State. These outfits are prepared and shipped by the employes of this laboratory. Letters have also been written to the health officers and the secretaries of the county medical societies, explaining the rules governing the work in this laboratory, and inviting the physicians to avail themselves of our services.

Of the 21 examinations for bacillus diphtheriæ, 13 were positive, and of these six specimens were received from Fort Wayne, three from Michigan City and three from Indianapolis, these specimens having been sent by one physician respectively from each city.

BACTERIOLOGICAL EXAMINATIONS.

	Positive.	Negative.	Doubtful.	Total.
Sputum (tuberculosis)	29	66	••	95
Diphtheria	13	8	• •	21
Blood (typhoid)	8	. 2	••	10

March.—We note with pleasure the increase of specimens sent for diagnosis, as this is only the third month since the formal opening of the Laboratory of Hygiene.

Diphtheria has not been much in evidence, only four of eight cultures giving a positive result. As might be expected, there is an increase in typhoid fever, because this disease is more prone to occur during the seasons where either heavy rains or the melting ice and snow increase the volume of surface water. As a consequence, many places which during the previous months had been polluted with excreta from persons suffering with typhoid fever, are now covered with water, which, receding, carries with it the dangerous bacteria, to distribute the disease in other places.

Of the 20 positive Widal reactions, six were found in blood, obtained from patients residing in Indianapolis, five others came from Michigan City. The examinations of sputum have increased considerably in number, Marion, Wayne and Clinton counties furnishing each a large percentage of the 142 examinations of this character.

BACTERIOLOGICAL EXAMINATIONS.

	Positive.	Negative.	Doubtful.	Total.
Sputum (tuberculosis)	51	91		142
Diphtheria	4	4		8
Blood (typhoid)	14	1		15

April—Typhoid fever is still on the increase. Greencastle, Putnam County, has quite an epidemic of this disease, 26 specimens from this town alone having been submitted for examination, all of them giving a positive Widal reaction. Laporte County, as represented by Michigan City, is in evidence with five positive

reactions. The remainder of the specimens are pretty evenly divided, with the exception of Marion and Vigo counties, which have three positive Widal tests each. The tuberculosis situation, judging from the specimens received this month, is bad indeed, nearly one-half of all cases showing the presence of bacillus tuberculosis.

BACTERIOLOGICAL EXAMINATIONS.

•	Positive.	Negative.	Doubtful.	Total.
Sputum (tuberculosis)	95	87	••	182
Diphtheria	4	2	• •	6
Blood (typhoid)	42	5	••	47

May.—Our records for this month show that we have made more examinations for tuberculosis than for any other disease. Nearly two-thirds of 168 samples of sputum contained tubercle bacilli. Thirteen positive Widal examinations came from nearly as many counties. The number of examinations to determine the presence of bacillus diphtheriæ was almost double that of last month.

BACTERIOLOGICAL EXAMINATIONS.

	Positive.	Negative.	Doubtful.	Total.
Sputum (tuberculosis)	109	59		168
Diphtheria	5	6	••	11
Blood (typhoid)	13	••		13

June.—There is very little to be said of this month. Laporte County furnished six cases of typhoid fever, although not all of them were from one town.

Of the 139 specimens examined for tuberculosis the majority gave a negative result. Diphtheria does not seem to prevail very extensively, as only ten cultures were submitted for examination during the month, and of these six did not contain diphtheria bacilli. This, with the exception of January, is the first month which shows more specimens with a negative result. We hope the cause of this is that the physicians avail themselves of the services of this laboratory in those cases which present but slightly suspicious symptoms, and if this supposition is correct it will mean that a long step toward the stamping out of this disease has been taken.

27-Bd. of Health.

BACTERIOLOGICAL EXAMINATIONS.

BAUTERIOLOGICAL GARRINA	LTIUMB.		
Sputum (tuberculosis)	2	Negative. 92 2 5	Total. 189 4 16
July.—During the month of July, 1906 in the Division of Bacteriology and Pa State Laboratory of Hygiene were as follows:	thology		
1. EXAMINATIONS FOR BACILLUS	TUBE ROUL	osis.	
Sputum	2	Negative. 115 5 3	Total. 189 7 8
Total	76	123	199
2. WIDAL TEST FOR TYPHOI	D FEVER.		
Positive. 34	Negative. 8	Doubtful. 1	Total . 43
8. EXAMINATIONS FOR BACILLUS	DIPHTHER	IÆ.	
Culture from throat	Positive 3	Negative. 5	Total.
4. Examinations of blood for plas	MODIUM M	IALARIÆ.	
Blood	Positive 2	Negative. 11	Total. 13
5. BACTERIOLOGICAL EXAMINATI	ON OF MI	LK.	
Number of samples			3
These three samples showed very high the unsatisfactory way in which they wer	-	_	bly to
6. MISCELLANEOUS SPECI	MENS.		
Pathological growths Examination for tetanus (positive) Anthrax (horse) Suspected tapeworm (negative) Plece of beef for pus Pus for gonococcus (negative)			1 1 1

7. SUPPLIES SHIPPED OUT.

Sputum outfits1	.49
Widal blood outfits for Widal tests	73
Diphtheria outfits	16
Malaria slides	2

We note that the number of positive Widal tests was four times greater than that of the cases in which the result was negative. Reports of the attending physicians show that many of these cases of typhoid ran a very mild course.

Of the 228 specimens of suspected tuberculosis, 60.9 per cent. were negative. The number of pathological specimens has been unusually large. Many of them were pieces of new growths, which upon examination, proved to be carcinoma.

Several of the miscellaneous specimens are worthy of note. In one instance, cerebral fluid from a horse was sent in. The owner of the animal suspected anthrax, having lost within a short time, four horses kept in the same stables. Microscopical examination, however, revealed the presence of a mixed infection of meningococci and other bacteria. Another was a case of tetanus, due to an explosion of a toy pistol. The spores of B. Tetanti were found in smears made from the wound immediately after death of the patient.

There have been 374 reports and letters sent out from this Department. The kind letters received from physicians of the State show an increasing appreciation of the assistance rendered them by the Laboratory of Hygiene, an appreciation which is very gratifying to those who have charge of the work.

August.—The month of August shows an increase in the number of blood examinations for typhoid fever, 65 per cent. of the specimens giving a positive Widal reaction.

Of the specimens examined for tuberculosis, 46.8 per cent. showed the presence of tubercle bacilli.

The head of one dog was received to be examined for rabies, and Nagri bodies were found in the brain. In connection with this disease, it seems necessary to call the attention of physicians to the fact that the head of the animal supposed to be rabid must be submitted, because scrapings from the wound caused by the animal are not satisfactory for such examinations.

There are still specimens coming in which are not prepared

according to the rules of this laboratory, and on account of the danger to the examiner, we can not examine them any more. The manner in which the accompanying blanks are filled out by the physicians is also very far from satisfactory. In some cases, even the physician's name is omitted, and reports on such cases can not, of course, be made.

There were 291 specimens examined in the laboratory from August 1st to September 1st.

1. EXAMINATIONS FOR BACILLUS TUBERCULOSIS.

I. MARKINATIONS FOR I	ACIDIOS	LODBÍGGOIX	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
		Positive.	Negative.	Total.
Sputum		51	102	153
Specimens from wall of abscess cavity				1
Urine			6	6
			•	2
Feces			2	
Pus	• • • • • • •	• • • • • •	1	1
				
Total		52	111	163
2. EXAMINATIONS FOR	BACILLUS			
		Positive.	Negative.	Total.
Cultures from throat		4	2	6
3. WIDAL TESTS FO	OR TÝPHO	ID FEVER.		
	Positive.	Negative.	Doubtful.	Total.
Blood			2	104
			_	
4. EXAMINATIONS FOR	PLASMODI	UM MALARI	. .	
	Positive.	Negative.	Doubtful.	Total.
Blood	2	5	1	8
5. SPECIMENS OF BLOOD F				
Pernicious anemia			.	1
Simple anemia				2
Total				8
6. SUSPECTED	HYDROPH	IOBIA.		
				1
Dog's head (positive)	·			
	·			

7. MISCELLANEOUS SPECIMENS.

Pus examined for gonococcus (positive)	2
Piece of steak for pus cavity	1
Sarcoma	1
Fibrous polyp	1
Filtrate from urine	1
Total	291
Letters received	62
Reports and letters sent out	354
Telegrams sent	e
SUPPLIES SENT OUT.	
Sputum outfits	209
Blood outfits for Widal tests	117
Serum cultures for diphtheria	38
Blood outfits for malaria	

September.—During this month the number of Widal tests made in the laboratory was higher than in any of the preceding months. The reason for this is that in all parts of the State occurred many cases of intestinal diseases resembling typhoid fever. Those physicians who have availed themselves of the services of the laboratory for the past year are now aware of the fact that it is impossible to recognize a mild case of typhoid fever by the clinical symptoms only. Many of the cases which occurred during the past year were very mild or were attended by symptoms atypical in character. In nearly all cases, however, where there was a true typhoid infection, regardless of the clinical aspect of the case, the Widal reaction was present.

The results of our records now show that the majority of specimens received during this month came from patients suffering with acute intestinal disorders other than typhoid, and this demonstrates clearly that the laboratory fulfills the purpose for which it was created, viz., to assist the general practitioner in making a correct diagnosis of all doubtful cases where infectious diseases are suspected. The time saved in this way is very valuable to physicians, as well as patients, and especially in case of diphtheria the lapse of a few hours may seriously interfere with the chances of the patient's recovery.

Considering the number of specimens of sputum received for examination, we see that physicians are beginning to send more specimens from patients in whom no tuberculosis is present. This shows that any one of these cases will be given the proper treatment before the dread disease is established in the system, a fact which will be of the utmost importance in the economy of this State.

BACTERIOLOGICAL EXAMINATIONS.

	Positive.	Negative.	Doubtful.	Total.
Tuberculosis	68	104	••	172
Diphtheria	4	9	3	16
Typhoid fever	39	90	2	131

October.—The month of October has brought a heavy increase in the number of examinations of serum cultures to determine the presence of bacillus diphtheriæ. This disease seems to be disseminated pretty well throughout the State, as we have received cultures from many different counties. Out of 50 examinations of this kind, bacillus diphtheriæ was present in 30 cultures. Twelve cultures were found negative, i. e., micro-organisms other than diphtheria were the cause of inflammation of the upper air passages. The majority of these cases of true diphtheria occurred in children, although there was one case in an adult terminating facally of which we received the culture after the death of the patient. In many of these cases the clinical symptoms were very slight, but the microscope revealed the fact that diphtheria bacilli were responsible for the trouble. We have no hesitation in saying that, had these mild cases been allowed to go on as simple sore throat or tonsilitis, there would have resulted an epidemic of diphtheria many times as severe as that, which the State Board of Health is combating at the present time.

In regard to the typhoid fever situation it is still grave enough, and we do not expect much abatement of this disease until the advent of winter.

BACTERIOLOGICAL EXAMINATIONS.

	Positive.	Negative.	Doubtful.	Total.
Sputum (tuberculosis)	47	75	• •	122
Diphtheria	30	12	8	50
Blood (typhoid)	48	48	• •	96

SUMMARY.

As we look over the records at the close of the first year in the history of the Indiana State Laboratory of Hygiene, we note with appreciation the favorable aspect of conditions as we see them now. The early months of this work, before the formal opening of the laboratory, disclosed more clearly every day the dire need which existed in this State for just such an institution as the Laboratory of Hygiene. Nearly every specimen of sputum received at that time was teeming with tubercle bacilli. Practically all of these specimens came from people who had been under physicians' treatment for years. Slight colds, bronchitis and other diseases of the respiratory tract had followed each other closely in these patients, but as the price of a sputum examination was too high for most of them, no attempt was made in this direction; indeed, in many cases, the physician was compelled to donate his services during the years which elapsed from the appearance of symptoms of advanced tuberculosis until the death of the patient.

After the formal opening of the laboratory the question of getting in touch with the physicians of this State was the first to be solved. This was done through the newspapers, the Bulletin of the Indiana State Board of Health, and also by writing letters to the various medical societies. To address each physician as we would have liked to do was out of the question; also was it impossible to send one of the physicians employed in this laboratory to speak before the various medical societies and demonstrate the proper manner in which specimens should be sent. The physicians, however, soon began to make more use of the laboratory.

As the months passed by we noticed a remarkable change in connection with examinations for tuberculosis. Where, in the early part of the year one question on the record blanks, viz.: "How long have you been treating the patient?" was answered with—"Several years"—there appeared instead, "Two or three months." Now, at the end of one year, it is rare indeed to find it stated on any blank that the patient has been under treatment even as long as one month. The usual answer now received on this question is either, "Patient has just come under my observation" or "This is the second visit."

The great importance of this change becomes at once apparent when we consider the chronicity of tuberculosis. Whenever the physician is enabled, at the time a patient comes to him, to have the sputum analyzed, he can at once take the proper measures to prevent this disease. Even in cases where tubercle bacilli are found the disease may be arrested.

A very notable instance of this character which we have had the good fortune to observe occurred during the past year. The sputum of Miss Mary Veach, residing at Mt. Summit, Ind., was sent for examination December 26, 1905, with the result that tubercle bacilli were present in small numbers. She was treated according to the rational method and specimens of her sputum were sent occasionally for examination. The bacilli persisted for about six months, then we did not hear from this patient for two months, and on August 3, 1906, another specimen was examined with negative result. This seemed so astonishing to the examining pathologist that inquiry was made to ascertain the probability of a mistake in sending the sputum. Since then, however, we have examined sputum from this patient repeatedly and are in position to record a case in which tuberculosis has been arrested in a resident of this State, merely by proper treatment, instituted at an early stage of the disease, without change of climate, as the patient never left her home.

WIDAL EXAMINATIONS MADE WITH THE BLOOD OF SUS-PECTED TYPHOID FEVER CASES.

Counties.	Positive.	Negative.	Doubtful.	Total.
Adams	4	. 8		7
Allen	8	3	• •	6
Bartholomew	5	1		6
Benton	1		•	1
Blackford	1			1
Boone	3	1		4
Carroll	4			4
Cass	5	2		7
Clark	1			1
Clav	2	• •		2
Clinton	7	1		8
Dearborn		2		2
Decatur	2	2		4
Delaware		3		3
Elkhart		2		2
Fountain	4	1		5
Grant	_	5	• •	11
Greene	1	1	• •	2

WIDAL EXAMINATIONS—Continued.

Counties.	Positive.	Negative.	Doubtful.	Total.
Hamilton	4	5	1	10
Hendricks	1	6	• •	7
Hancock	1	1	1	3
Harrison	2	• •		2
Henry	4	3	••	7
Howard	1	1	• •	2
Jackson		1	• •	4
Jefferson	10	10		20
Jennings				3
Johnson	_	8		6
Knox		1		1
Kosciusko		4		7
Lake	1	· 2		3
Laporte		. 5		29
Lawrence				1
Madison		1		8
Marion		53		122
Marshall		••		5
Montgomery		3	• •	4
Newton		1	• •	2
Noble		7	••	11
Owen		•	••	1
Porter	_	• •	••	î
Posev		1	••	2
Putnam		4	••	30
Randolph		6	••	18
Ripley		2	• •	2
Shelby		2	1	3
Spencer		2	1	8
St. Joseph	-	2	••	4
Switzerland		2	• •	1
		••	• •	3
Tippecanoe		• •	• • .	-
Tipton		4	• •	Þ
Union		3	• •	4
		1	• •	1
Vigo	-	2	••	15
Wayne		33	1	66
White	2	4	1	7
Total	294	200	5	499

SPUTUM EXAMINATIONS.

Counties.	Positive.	Negative.	Total.
Adams	8	4	7
Allen	5	17	22
Bartholomew	16	14	30
Benton	7	2	9
Blackford	5	8	13
Boone	14	6	20
Carroll		4	8
Cass	2	6	8
Clark		6	12
Clay		5	14
Clinton		22	35
Crawford		5	15
Daviess		6	16
Dearborn		1	1
	_	14	19
Dekalb		2	3
Delaware		5	13
Elkhart		14	25
Fayette		1	4
Fountain		20	35
Franklin		2	4
Fulton	1	3	4
Gibson	3	2	5
Grant	2	6	8
Greene	1	2	3
Hamilton	14	22	36
Hancock	7	6	13
Harrison	4	6	10
Hendricks	25	26	61
Henry	22	24	46
Howard	1	7	8
E untington	_	7	9
Jackson		8	13
Jasper		4	6
Jay		2	4
Jefferson		15	25
Jennings		1	3
			7
Johnson		3	-
Knox		12	22
Kosciusko		4	13
Lagrange		11	23
Lake		• •	1
Laporte		24	32
Lawrence	• • • • •	2	2
Madison		19	33
Marion	92	152	244
Marshall	1	8	4

SPUTUM EXAMINATIONS—Continued.

Counties.	Positive.	Negative.	Total.
Martin	2	3	5
Miami	8	8	16
Monroe	2	1	3
Montgomery	6	16	22
Morgan	2	• 2	4
Newton		2	2
Noble	3	8	11
Orange	1	• •	1
Owen	1	3	4
Parke	3	10	13
Perry	1	5	6
Pike		2	2
Posey	13	14	27
Pulaski	7	9	16
Putnam	5	12	17
Randolph	21	5 2	53
Ripley	4	6	10
Rush	8	8	11
Scott	2		2
Shelby	4	10	14
Spencer	2	7	9
Starke	8	5	13
St. Joseph	1	2	3
Sullivan	10	15	25
Switzerland	2	• •	2
Tippecanoe	8	11	19
Tipton	8	8	16
Union	2	7	9
Vanderburgh	1	1	2
Vermillion	12	16	28
Vigo	8	15	23
Wabash	9	14	23
Warren	4	3	7
Washington	1	1	2
Wayne	47	57	104
Wells	10	6	16
White	7	11	18
Whitley	4	3	7
Total	640	863	1,503

DIPHTHERIA BY COUNTIES.

Whole

Number of Cultures Negative. Doubtful. Counties Examined. Positive. 2 Allen Bartholomew 1 . . 1 1 Blackford Carroll 1 1 2 Daviess Decatur 2 Delaware 1 Elkhart 1 1 Fayette. Fountain 3 1 Franklin 1 Hamilton 4 Hancock 3 1 1 Harrison 1 Hendricks 1 2 1 Howard Huntington 1 Jasper 2 2 2 R Jefferson 10 1 2 Kosciusko 5 8 4 Laporte 3 Lawrence 1 в 2 1 Madison Marshall Marion 18 9 7 Montgomery Newton 8 1 4 Noble 2 Posev 1 1 Putnam 1 1 8 Rush 1 1 Spencer St. Joseph 1 1 Tippecanoe 1 1 Tipton 1 Union 2 Vermillion Wabash 1 1 в Wayne Wells R 1 2 2 1 White 92 68 11 Total

SPUTUM EXAMINATIONS BY MONTHS.

Months.	Positive.	Negative.	Total.
Months. January	69	72	141
February		66	95
March	51	91	142
April	95	87	182
May	. 109	59	168
June	. 47	92	139
July	. 74	115	189
August	. 51	102	153
September	. 68	104	172
October	47	75	122
Total	.640	863	1,503

WIDAL EXAMINATIONS, WITH BLOOD, BY MONTHS.

Months.	Positive.	Negative.	Doubtful.	Total.
January		6		24
February	8	2	••	10
March	14	1		15
April	42	. 5	• •	47
May	13	• •	• •	13
June	11	5	• •	16
July	84	8	1	43
August	67	35	2	104
September	89	90	2	131
October	48	48	••	96
Total	294	200	5	499

DIPHTHERIA BY MONTHS.

Months.	Positive.	Negative.	Doubtful.	Total.
January	28	18	• •	41
February	13	8	• •	21
March	4	4		8
April	4	2	• •	6
May	5	6	••	11
June	2	2	• •	4
July	5	3		8
August	2	4	••	6
September	4	9	3	16
October	30	12	8	50
Total	92	68	11	171

As shown in the notes appended to the records of each month, several epidemics of typhoid fever and diphtheria occurred during the past year. Allen County has suffered most heavily from diph-

theria according to our records, as we find that ten out of twelve examinations of serum cultures showed the presence of diphtheria bacilli. Next to this comes Marion County, with eighteen positives out of twenty-seven examinations. We also received cultures from numerous other counties, but none of them gave as many positive results. Our records in Widal reactions show the largest number of positive results in Laporte County, where 25 of 29 cases were found to be typhoid fever. It is a notable fact that we have received specimens of this kind from physicians in Michigan City every month for the past year, and in a very small percentage only the result was negative. Wayne County is represented with 32 positive out of 66 examinations, and Jefferson County has 12 positive reactions from a total of 20 tests made. Marion County showed 69 positive reactions in 122 Widal tests; but it should be taken into consideration that this is only a small part of the Widal examinations made in this county, as the Indianapolis City Laboratory conducts the majority of these examinations in the above named city.

If the means to conduct a campaign of education among the citizens of Indiana are placed within the reach of the physicians connected with the Laboratory of Hygiene, the latter will be made the principal life-saving station of the State and results will not be long in forthcoming, as indeed they are showing now.

We are safe in saying that every physician who has availed himself of the services of the Indiana State Laboratory of Hygiene has materially benefited his community and incidentally every citizen in the State of Indiana.

STATISTICAL REPORT FOR THE YEAR 1906.

REGISTRATION REPORT, 1906.

This report is for the calendar year 1906. The population figures are estimated from the census of 1900, according to the method of the United States Census Bureau.

In the following tables the causes of death are arranged according to the Bertillon classification, which has been adopted by all of the registration states of the country. This international classification was used by the United States Bureau of the Census in its last statistical compilation of causes of death.

Table 1 is a classification of all deaths with rates per 100,000 population, classified and arranged according to the international system.

Table 2 is a classification of deaths from all causes by months, ages, color, nationality and conjugal condition.

Table 2 A is a recapitulation of the classified deaths by months, ages, color, nationality and conjugal condition.

Table 3 gives death from all causes by counties, months, ages, color, nationality and conjugal condition.

Table 4 gives deaths from certain diseases by geographical sections and by counties.

Table 5 gives death rates from certain important causes, by counties in geographical sections.

Table 6, annual death rates for seven years, 1900 to 1907, with averages of cities of 5,000 population and over, compared with rural and state rates.

Table A gives births by counties, months, color and nationality of parents.

Table B gives births by counties, number of children born to each mother, grouped ages of parents, still births, plurality and illegitimate births.

Table C gives, by counties, the marriages by months, color and nationality.

Table D gives, by counties, the marriages by grouped ages.

BIRTHS.

The number of births reported in the State of Indiana during the year 1906 was 45,300, of which number 23,469 were males and 21,831 females. Of the total males, 23,013 were white and 456 col-

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ored. Of the total females, 21,418 were white and 413 colored. In the preceding year 44,114 births reported; males, 22,281; females, 21,333. October had the largest number of births, 4,263, and June the smallest, 3,255. September had the greatest number of deaths, 3,146, and June the lowest, 2,429. The births (45,300) rate 17.1, exceed the deaths (35,992); rate 13.5 per 1,000 population.

The nationality of parents shows as follows: American-born fathers, 40,166; American-born mothers, 40,919. Foreign-born fathers, 2,901; foreign-born mothers, 2,360; Nationality not reported, fathers, 1,798; mothers, 1,586.

Of the number of children born to each mother, 13,210 were first; 9,779, second; 7,059, third; 4,841, fourth; 3,333, fifth; 2,352, sixth; 1,627, seventh; 1,128, eighth; 685, ninth; 433, tenth; 254, eleventh; 306 were twelfth child and over, and 293 were not reported.

As to the ages of parents, 648 fathers and 4,795 mothers were under twenty years of age. In the age period of 50 to 60 there were 928 fathers and 23 mothers; age period 60 to 70, there were 111 fathers, and between 70 and 80 there were eleven fathers.

One thousand one hundred and three still births, also reported as deaths. The illegitimate births numbered 806, of which 429 were males, and 377 females. The plural births numbered 862, of which 455 were males, and 407 females. There were four sets of triplets in this number of pluralities.

MARRIAGES.

The total marriages reported, 26,225. This is an increase over the preceding year of 615. October had the greatest number of marriages, 2,762, and May had the smallest number, 1,675. The general statistics on marriages will be found in Tables C and D.

DEATHS.

The total number of deaths reported in 1906 was 35,992, with a rate of 13.58. In the preceding year 36,502 deaths, with a rate of 13.78. Males, 19,009; females, 16,983. White males, 18,247; colored, 762; white females, 16,317; colored, 666. American-born, 16,715 males, 15,402 females; foreign-born, 1,992 males, 1,446 females; nationality not reported, 302 males and 135 females. Single males, 9,220; females, 6,979; married males, 6,938; females, 5,781; widowed males, 2,525; females, 4,129; conjugal condition not reported, 326 males and 94 females.

The number of deaths, with rates for the years named, appear in the following table:

	1900.	1901.	1902.	1903.	1904.	1905.	1906
Deaths	35,516	36,544	34,069	33,892	37,240	36,502	35,992
Annual Rate	14.1	14.5	13.5	13.4	14.0	13.7	18.5

Of the total number of deaths, 8,004, or 22.2 per cent. of the whole number, occurred in the first-year of life. This is almost one-fourth of the total.

Two thousand four hundred and sixty-two deaths occurred in the age period of 1 to 5, making the total loss of children under 5 years of age 10,466, or 29.0 per cent. of the total deaths. This is 23.1 per cent. of the total births reported. In the age period of 5 to 20, there were 2,585 deaths, or 7.1 per cent. of the total number. The total loss under 21 years of age is 13,051, or 36.2 per cent. of the total deaths. In the age period of 20 to 50, practically the prime of life, there were 7,942 deaths, or 22.0 per cent. of the total deaths. There were 360 deaths of persons over 90 years of age, a decrease of 25 from 1905.

The following table, giving deaths by months, shows March with the greatest number of deaths, with January, April, August and September having about the same. June had the lowest number of deaths, as was the case in 1905.

Jan.	Feb.	Mch.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
8,110	2,924	3,321	3,142	2,765	2,429	2,845	3,136	3,146	8,1 01	3,049	8,024

March and April had the most tuberculosis deaths; March had most pneumonia; August and September were highest with diarrheal diseases, and October had the greatest number of typhoid deaths.

PRINCIPAL CAUSES OF DEATH FOR LAST SEVEN YEARS, WITH AVERAGE.

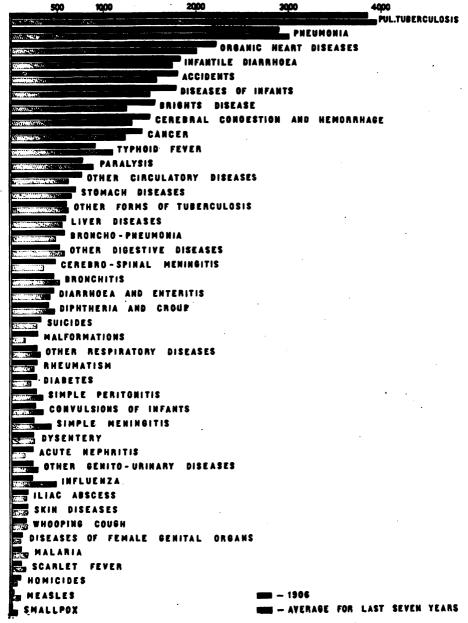
The following table gives the principal causes of death in their numerical order, for the past seven years, and also the yearly average for each cause, and Chart No. 1 gives a graphic representation of the principal causes for 1906:

PRINCIPAL CAUSES OF DEATH IN INDIANA FOR THE LAST SEVEN YEARS WITH AVERAGE,

	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average
Pulmonary tuberculosis. Pneumonia. Organic heart disease. Infantile diarrhoes. Accidents.	8, 364	4,169	3,952	8,915	4,436	3,998	3,854	8,95
	2, 744	3,384	2,758	2,634	3,487	3,124	2,890	8,00
	1, 759	1,754	1,800	2,108	2,180	2,182	2,208	2,00
	2, 049	1,776	1,779	1,449	1,629	1,700	1,823	1,74
	1, 334	1,463	1,891	1,601	1,622	1,795	1,796	1,57
6. Diseases of infants	1, 361	1,947	1,188	1,318	1,725	1,908	1,766	1,50
	1, 145	1,066	1,183	1,164	1,296	1,428	1,549	1,25
orrhage	1,056	1,264	1,272	1,346	1,485	1,351	1,496	1,31
	1,046	1,113	1,209	1,217	1,259	1,424	1,417	1,24
	1,440	1,198	1,217	1,013	1,013	928	918	1,10
Paralysis Other circulatory diseases Stomach diseases Other forms of tuberculosis Liver decases	1,109	986	762	762	985	901	777	89
	470	574	648	596	665	687	768	62
	676	704	641	613	561	678	609	65
	1,281	493	440	477	542	494	602	62
	580	518	580	527	596	578	591	55
6. Broneho-pueumonia	228	480	417	466	672	585	576	48
	686	662	605	519	580	498	524	57
	391	236	187	341	847	460	481	34
	522	562	484	523	571	540	460	52
	345	462	891	411	427	450	460	42
Diphtheria and croup. Sulcides. Maiformations. Other respiratory diseases. Reumatism.	746 196 242 298 256	554 254 180 870 184	424 278 162 352 209	462 254 152 276 220	814 283 172 325 266	366 338 167 285 258	402 821 284 276 274	15 15 27 27 21 21
6. Diabetes. 7. Simple paritonitis. 8. Convulsions of infants. 9. Simple meningitis. 0. Dysentery.	111 825 881 447 828	204 354 406 553 263	197 366 339 509 277	197 311 335 365 211	226 375 345 538 184	231 338 306 352 218	269 265 254 240 235	2 8 8 4 4 4 5 2 4
Acute nephritis. Other genito-urinary diseases. Influenza. Iliac abscess.	223	142	150	191	207	189	230	15
	274	243	390	437	229	194	228	24
	424	1,049	302	348	434	591	224	41
	125	137	145	163	164	194	174	11
5. Skin diseases	261 287	124 181	181 1 64	129 148	140 94	179 186	170 157	10
organs.	107	85	87	85	91	88	112	1
8. Malaria	374	197	161	181	116	116	102	
9. Scarlet fever	141 27 85 19	149 48 161 21	150 36 67 75	164 62 78 195	192 48 212 97	183 85 6 35	101 93 23 8	1
Total	29,208	29,965	27,880	27,909	30,981	80,404	30,092	29,4

PRINCIPAL CAUSES OF DEATH

IN INDIANA 1906



TUBERCULOSIS.

Tuberculosis still goes on its murderous way in Indiana, yet a slight decrease as compared with preceding years appears. All the following tables and diagrams show a slight decrease. Whenever possible the State Board of Health calls the attention of the people to the facts that tuberculosis is preventable, that it is curable if taken in its early stages, and that through private and governmental effort it can be greatly reduced.

HAVOC WROUGHT BY CONSUMPTION IN INDIANA IN 1904-1905-1906.

	1904.	1905.	1906.
Total consumption deaths	4.978	4.492	4,456 1,675 2,771
Male deaths	1,807	1,745	1,675
Female deaths	3, 171	2,793	2,771
Mothers, age 18 to 40, prime of life	867	987	917
Fathers, age 18 to 40, prime of life Orphans made under 12 years of age.	490	315	255
Homes invaded	3, 396	2,694 3,307	2,353 3,283

Annual cost to the people, \$10,000,000.

ALL FORMS TUBERCULOSIS

Deaths by months, with average for last seven years

	Deaths by mo	nths, with	average fo	r last sever	years.			
Months.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average.
January	417	389	402	368	420	419	415	404
February		440	389	850	414	407	394	402
March		433	459	445	550	461	443	463
		449	444	411	459	426	439	440
April	405	420	405	383	502	391	398	429
June	394	348	323	363	400	. 361	331	360
July	382	394	320	373	397	361	329	366
August		403	331	340	390	355	367	368
September		309	353	354	347	306	307	331
October		350	305	306	365	326	344	337
November		357	320	333	352	326	346	335
December	200	270	94E	900	800	050	949	907

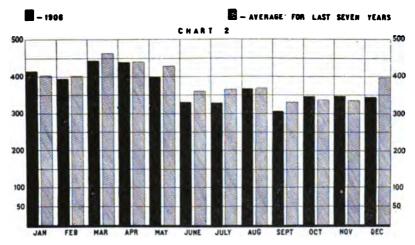
ALL FORMS TUBERCULOSIS.

Deaths by ages, with average for last seven years.

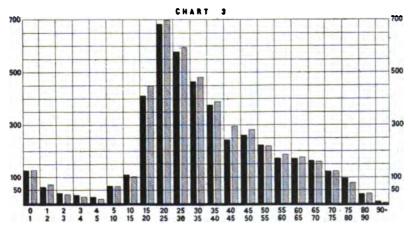
AGES.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average.
Under 1 year	155	135	113	109	144	108	126	127
1-2 years	74	62	68 31	59	99	85	62	7
2-3 years	42	34	31	24	42	26	38	34
3-4 years	23	23	17	23	25	18	31	23
4-5 years	12	17	12	14	13	11	24	14
5-10 years	69	63	51	64	68	63	64	61
10-15 years	90	99	98	92	126	97	106	101
15-20 years	532	417	401	436	501	449	411	440
20-25 years	690	718	672	707	725	697	681	694
25-30 years	627	595	598	572	614	574	577	594
30-35 years	457	519	464	491	509	464	464	48
35-40 years	388	386	346	374	436	419	875	38
10-45 years	346	310	811	267	316	273	242	29
45-50 years	269	248	235	225	286	245	260	28
50-55 years	218	185	224	217	232	222	221	21
55-60 years	209	190	181	193	206	153	171	18
60-65 years		200	153	166	189	165	170	17
65-70 years		171	155	143	152	165	162	180
70-75 years		118	124	116	136	122	122	12
75-80 years		81	76	74	75	72	96	7
80-90 years		42	38	àô	47	84	26	i i
90 and over		2	~~i	~ ~	3	· •	7	

TUBERCULOSIS ALL FORMS.

COMPARISON DY MONTHS



COMPARISON DY AGES



PULMONARY TUBERCULOSIS.

Deaths by Months, with average for last seven years.

MONTES.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average
January February March April May June	300	368	858	324	379	395	359	354
	300	390	353	318	372	379	349	351
	318	388	416	309	485	421	391	402
	339	408	409	365	409	380	386	385
	266	378	368	339	448	346	337	354
	301	310	297	326	359	330	282	315
July	244	349	295	323	358	310	284	309
	271	254	800	293	332	308	812	310
	212	266	296	318	302	263	258	273
	274	302	266	261	322	266	289	283
	248	321	288	297	317	287	302	294
	291	335	306	352	353	313	310	323

PULMONARY TUBERCULOSIS.

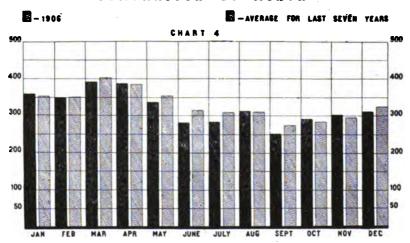
Deaths by ages, with average for last seven years.

AGES.	1900.	1901.	1902.	1908.	1904.	1905.	1906.	Avera ge.
Under 1 year. 1-2 years. 3-3 years. 3-4 years. 4-5 years.	43 13 9 8	76 35 14 12 7	59 23 16 7 6	53 28 11 10 7	72 48 23 14 9	58 87 13 10	00 27 19 10 8	50 31 15 9
5-10 years 10-15 years 18-20 years 20-25 years 25-30 years	81 50 818 543 491	28 84 389 676 559	28 75 878 626 563	35 59 393 666 535	32 101 457 . 687 582	87 75 411 650 588	81 76 859 625 836	31 75 385 639 541
30-35 years 35-40 years 40-45 years 45-50 years 50-55 years	338 289 252 199 158 155	490 356 287 223 174 166	435 329 200 225 196 166	461 848 244 218 194 175	486 412 271 262 209 186	487 385 254 219 200 139	429 842 220 231 198 155	439 351 261 224 189 163
60-65 years 65-70 years 70-75 years 76-80 years 80-90 years 90 and over	181 118 92 50 29	182 148 105 78 87 2	140 137 112 70 36	151 123 107 67 25	175 137 121 65 30	151 154 111 66 28	145 147 103 .76 81	153 137 107 66 36

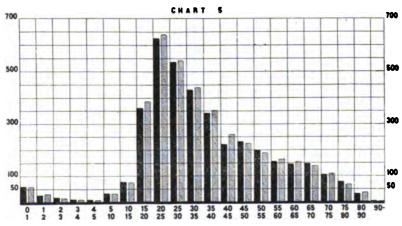
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PULMONARY TUBERCULOSIS

COMPARISON BY MONTHS



COMPARISON DY AGES



CONSUMPTION DEATH RATES PER 100,000 BY COUNTIES FOR 1906, IN INDIANA.

State Rate, 168.2.

COUNTIES.	Tuberculosis, all forms.	COUNTIES.	Tuberculosis all forms.
dams	169.1	Lawrence.	218.
llen	164.3	Madison	112.
Sartholomew		Marion	236.
Senton	102.7	Marshall	93.0
Blackford	65.2	Martin	12.0
loone		Mismi	180.
rown	164.4	Monroe	189.
arroll		Montgomery	
a.es	153.1	Morgan	202.
lark	166.3	Newton	72.
Say	125.6	Noble.	84.
linton		Qhio	
rawford		Orange	304.
avies		Owen	138.
Dearborn	162.1	Parke	145.
Decatur		Perry	281.
ekalb		Pike	
elaware		Porter	101.
rubois	161.7	Posey	185.
Elkhart	145.5	Pulaski	105.
'ayette		Putnam	
loyd	174.4	Randolph	
ountain		Ripley	
ranklinulton		RushScott.	184. 282.
· uncon	100.4	SCOUL	
ibeon		Shelby	
rant		Spencer	
reene		Starke	
IamiltonIancock		SteubenSt. Joseph	160.
		•	
artison	226.4	Sullivan	
Iendricks	145.5 164.1	Switzerland	
Ioward		Tippecanoe	
Iuntington		Union	
· ·	1		
ackson		Vanderburgh	
asper		Vermillion	
gyefferson		Vigo. Wabash	
ennings.		Warren	
	1		
ohnson	248.9	Warrick.	
nox		Washington	
Coeciusko	133.0	Wayne	242
Agrange	117.6	Wells	132. 92
Aporte	152.6	Whitely	150
			100

MONTHLY ANALYSIS OF TUBERCULOSIS DEATHS.

January—The total number of deaths from tuberculosis was 412; of these 355 were of the pulmonary form. Of the total number, 195 were males and 217 females. Of the males, 37 were fathers in the age period of 18 to 40 and left 77 orphans under 12 years of age. Of the females, 64 were mothers in the age period of 18 to 40 and left 130 orphans under 12 years of age. We credit consumption with the destruction of 101 fathers and mothers in the useful period

of life and the production of 207 orphans. How many of these poor children will find their way into the orphan asylums can not be told. The homes invaded by the disease were 330. Two hundred seven of the total consumption deaths were in the age period of 15 to 40, which is 52 per cent.

February—The total number of deaths from tuberculosis was 372, and of these 325 were of the pulmonary form. Of the total number, 196 were females and 176 males. Of the males, 30 were fathers in the age period of 18 to 40, and left 67 orphans under 12 years of age. Of the females, 77 were mothers in the age period of 18 to 40, and left 161 orphans under 12 years of age. Number of homes visited by the disease, 354. Total number of orphans produced, 168. Thirty-three of the deaths were under 15 years of age; 274 in the age period of 15 to 50, and the remainder were above 50.

March—The total number of deaths from tuberculosis was 406, and of these 343 were of the pulmonary form. Of the total number 195 were males and 211 females. Of the males 36 were fathers in the age period of 18 to 40, and left 77 orphans under 12 years of age. Of the females 87 were mothers in the age period of 18 to 40, and left 179 orphans under 12 years of age. The number of homes visited by the disease was 398. The total number of orphans produced was 256. There were 59 consumption deaths of persons over 60 years of age.

April—Total number of deaths from tuberculosis, all forms, was 411. Of these 359 were of the pulmonary form. Of the total number 191 were males and 220 females. Of the males 39 were fathers in the age period of 18 to 40 and left 80 orphans under 12 years of age. Of the females 83 were mothers in the same age period as above and left 167 orphans. The number of homes visited by the disease was 386. Total number of orphans produced, 247. Two hundred and ninety-five deaths were in the age period of 15 to 50, which is 17.7 per cent. of the total.

May—Total number of deaths from all forms, 376, 318 being pulmonary. Of the total number, 147 were males and 229 females. Of the males, 37 were fathers between the ages of 18 and 40, and left 77 orphans under 12 years of age. Of the females, 73 were mothers of the same age period as above, and left 149 orphans under 12 years of age. Number of homes invaded, 372. Total number of orphans created, 226. Number of widows created, 37; number of widowers, 73.

June—The total number of deaths from tuberculosis, all forms, was 317, 275 being pulmonary. Of the total number, 143 were males

and 174 females. Of the males, 27 were married and in the age period of 18 to 40, and left 57 orphans under 12 years of age. Of the females, 66 were married and in the same age period as above, and they left 133 orphans under 12 years of age. Total orphans created by the disease under 12 years of age, 190. The number of homes invaded was 287.

July—Total number of deaths, 319. Forty-five of these were other forms than pulmonary. Of the total number, 143 were males and 176 females. Of the males, 25 were married and were in the age period of 18 to 40, and they left 50 orphans under 12 years of age. Of the females, 57 were married and in the age period just named, and they left 116 orphans under 12 years of age. The total number of orphans made by this disease in one month was 166. The total number of homes invaded, 291.

August—Total number of deaths, 351, 297 pulmonary, 54 other forms. Of the total number, 106 were males and 195 females. Of the males, 22 were married and in the age period of 18 to 40, the prime of life, and they left 48 orphans under 12 years of age. Of the females, 75 were married in the same age period as above and left 157 orphans under 12 years of age. The total number of orphans was 205, and the homes invaded numbered 316. Two deaths occurred in the age period of 80 to 90.

September—Total number of deaths, 291—240 pulmonary, 51 other forms. Of the total number, 136 were males and 155 females. Of the males, 23 were married in the age period of 18 to 40 and left 46 orphans under 12 years of age. Of the females, 58 were married in the same age period as above and left 126 orphans under 12 years of age. Total number of orphans made by the disease this month, 172. Homes invaded, 251. Two deaths, both women, occurred at 80 years of age. Nineteen, 10 of whom were women, occurred in the age period of 70 to 80.

October—Total number of deaths 323, of which 267 were of the pulmonary form and 56 other forms. Of the total number, 134 were males and 189 females. Of the males, 29 were married in the age period of 18 to 40 and left 59 orphans under 12 years of age. Of the females, 66 were married in the same age period as above and left 139 orphans under 12. The total number of orphans made by the disease this month was 198. Homes invaded, 296. Thirteen tuberculosis deaths occurred of people over 70 years of age.

November—The total number of deaths was 323, of which 284 were of the pulmonary form, and 39 other forms. Of the total number, 129 were males and 184 females. Of the males, 28 were

married in the age period of 18 to 40 and left 58 orphans under 12 years of age. Of the females, 76 were married in the same age period as above, and left 156 orphans under 12 years. The total number of orphans made by the disease this month was 214; homes invaded, 299. As usual the greatest destruction was in the useful period of life, 15 to 50, wherein 228, or 70.5 per cent., of the total deaths occurred.

December—Total number of deaths, 329, of which 293 were of the pulmonary form. The male deaths were 165, females 164. Of the males, 31 were married, in the age period of 18 to 40, and left 69 orphans under 12 years of age. Of the females, 56 were married, in the same age period as above, and left 116 orphans under 12 years of age. Total number of orphans made by the disease this month, 185. Homes invaded, 291. By age periods the tuberculosis deaths were: Under 5 years, 19; 5 to 15, 10; 15 to 40, 173; 40 to 60, 77; 60 and over, 50.

PNEUMONIA.

A slight decrease appears for pneumonia, inasmuch as the number of deaths in 1906 was 3,392, and the average annually for the last seven years is 3,419. In large cities pneumonia leads as a cause of death, but it is second to consumption in Indiana. The tables by months and by age periods, with their accompanying graphic charts, show the pneumonia status in this state.

PNEUMONIA.

Deaths by months with average for last seven years.

MONTHS.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average.
January February March April May June	375	655	473	450	579	601	490	517
	435	673	535	424	750	781	439	576
	616	646	497	419	761	656	541	592
	498	466	371	330	576	265	404	415
	234	280	207	240	326	189	232	244
	94	120	104	129	115	90	119	110
July. August September October. November.	62	72	70	83	101	82	88	79
	65	74	97	86	69	69	82	74
	56	90	113	114	86	88	98	92
	89	156	169	134	135	148	189	145
	136	202	196	246	251	253	300	226
	223	389	307	389	353	372	410	349
Totals	2,883	3,823	3, 319	3,044	4,102	3,594	3,392	8,419

PNEUMONIA.

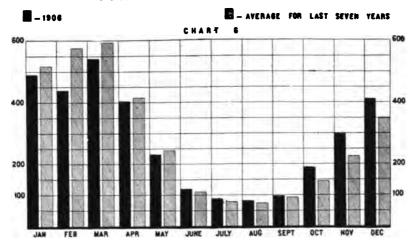
Deaths by ages, with average for last seven years.

AGES.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average.
Under 1 year. 1-2 years. 2-3 years. 3-4 years. 4-5 years.	542 206 113 53 40	758 248 123 73 46	692 246 113 47 39	703 216 107 57 34	919 326 145 87 53	898 251 97 63 28	714 262 127 67 46	746 250 118 64
5-10 years 10-15 years 18-20 years 20-25 years 25-30 years	82 64 85 95 92	120 66 139 130 119	93 55 93 107 86	102 57 88 83 72	145 72 128 108 98	90 71 89 83 79	91 50 95 77 89	108 62 102 97
30-35 years	91 104 89 107 116 107	115 121 142 110 159 179	96 80 104 87 118 112	58 78 77 103 89 132	104 114 105 137 137 136	90 107 98 106 130 140	86 104 106 112 130 137	91 101 103 106 124 120
60-65 years 65-70 years 70-76 years 70-76 years 80-90 years 80-90 years 90 and over	181 162 163 162 195	218 244 246 191 216 25	142 205 192 200 181 24	164 172 202 192 204 27	195 225 261 268 271 42	173 237 270 226 237 28	155 216 229 232 232 25	178 206 223 210 219 24

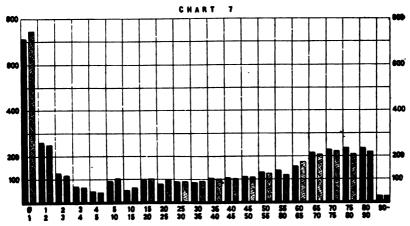
INDIANA

PNEUMONIA DEATHS

COMPARISON DY MONTHS



COMPADISON DY AGES



MONTHLY ANALYSIS OF PNEUMONIA DEATHS.

January—Pneumonia caused 415 deaths, rate 184.8 per 100,000. In the corresponding month last year, 558 deaths, rate 248.6. This is a decided improvement, for which we should be grateful. One hundred forty-seven of the deaths were under 15 years of age, 92 between 20 and 50, 138 over 50, 3 were 90 and over.

February—Pneumonia caused 403 deaths; rate, 197.8. In the corresponding month last year, 741 deaths; rate, 362.2. In the preceding month, 415 deaths; rate, 184.8 per 100,000. There were 12 fewer in February than occurred in January. Of the total pneumonia deaths, 187 were males and 216 females. It is quite unusual for females to lead in this disease. Of the total number, 142 were under 15 years of age, 84 between 15 and 50, and the remainder were over 50. The right comparison is by the corresponding month last year, when there were 741 deaths, being a difference in favor of February of this year of 334.

March—Pneumonia caused 469 deaths; rate, 208.9 per 100,000. This is an increase over the preceding month of 66 deaths. In the corresponding month last year, 599 deaths. By this comparison, which is the right one, there is a decided improvement to be noted, as there is a difference of 130 deaths. Seventy-five of the deaths from pneumonia were under one year of age, 73 in the age period of 1 to 5, 70 between 5 and 30, 113 between 30 and 60, 54 in the age period of 60 to 70, 51 from 70 to 80, 44 from 80 to 90, and three over 90.

April—Pneumonia caused 386 deaths. In the corresponding month last year, 223 deaths, an increase of 163. Fifty-four pneumonia deaths were under 1 year of age, 75 between 15 and 50, and 132 over 50. Two men over 90 years of age died from the malady.

May—Pneumonia caused 213 deaths. In the corresponding month last year, 170. By this comparison, there is an increase of 43 deaths. Of the pneumonia deaths, 68 were under 5 years of age, 17 between 5 and 20, 32 between 40 and 60, 18 between 60 and 70, 32 from 70 to 80, and 16 were 80 and over.

June—Pneumonia caused 111 deaths. In the corresponding month last year, 91 deaths. Forty-seven pneumonia deaths were under 5 years of age; 9 were from 5 to 20; 7, 20 to 40; 12, 40 to 60; 27, 60 to 80; 9, 80 and over.

July—Pneumonia caused 85 deaths. In the preceding month, 111. In the corresponding month last year, 63. Of the pneumonia deaths, 25 were under 20 years; 12 in the age period of 20 to 50; 14 in the age period of 50 to 70, and the remainder 70 years and over.

August—Total number of deaths, 79. In the corresponding month last year, 61. Of the pneumonia deaths, 14 were under one year of age; 13 were 1 to 5; 23, 5 to 50; 17, 50 to 70; 11, 70 to 90, and one was over 90 years old.

September—Total number of deaths, 93. In the corresponding month last year, 85. Of the pneumonia deaths, 30 were under 1 year of age; 17, 1 to 10; 6, 10 to 20; 6, 20 to 40; 10, 40 to 60; 10, 60 to 70; 10, 70 to 80; 6, 80 and over.

October—The total number of deaths from pneumonia, 176. In the corresponding month last year, 138. Of the pneumonia deaths, 59 were under one year of age, 38 in the age period of 1 to 5; 11 in the age period of 60 to 70: 17 in the age period of 70 to 80; 4 were over 80, and 2 over 90 years.

November—The total number of deaths from pneumonia was 302. In the corresponding month last year, 219. Of the pneumonia deaths, 83 occurred in the first year of life, 39 from 1 to 5 years; 45 were in the age period of 70 to 80, and 26 in the age period of 80 to 90, and 2 were over 90.

December—The total number of deaths, 408. In the corresponding month last year, 347. Of the total deaths this month 210 were males and 188 females. By certain ages the deaths were: Under 1 year, 106; 1 to 10, 42; 10 to 30, 31; 30 to 50, 47; from 50 to 70, 69; 70 and over, 91.

TYPHOID FEVER.

The typhoid fever deaths in 1906 numbered 913, which is a slight decrease as compared with the annual average, 1,100, for the last seven years. As shown in the tables herewith, and by the graphic charts drawn therefrom, typhoid has gradually fallen since 1900. The four last months of the year show more deaths from typhoid than the eight preceding months.

TYPHOID FEVF?.

Deaths by months, with average for last seven years.

MONTHS.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average
January February March April May June	109	74	66	61	36	51	39	63
	52	50	37	53	55	35	29	44
	40	49	41	55	62	34	40	44
	39	41	45	45	61	26	32	43
	44	35	31	39	55	33	39	36
	27	27	28	42	58	48	29	37
July. August September October. November. December.	65	81	88	64	70	57	52	68
	144	148	176	120	107	121	96	130
	245	198	237	193	138	203	155	190
	323	222	225	165	167	154	168	200
	208	185	155	104	137	101	148	144
	144	88	88	72	67	65	86	87
Totals	1,440	1,198	1,217	1,013	1,013	928	913	1,10

TYPHOID FEVER.

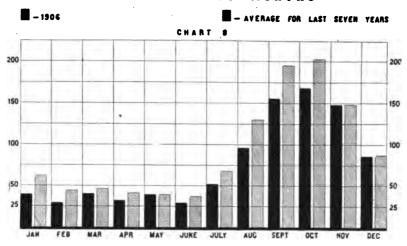
Death by ages, with average for last seven years.

AGES.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average.
Under 1 year. 1-2 years. 2-3 years. 3-4 years. 4-5 years.	13	15	9	4	16	11	12	11
	14	14	15	13	11	14	11	13
	18	12	29	12	18	16	13	17
	26	18	19	17	8	11	19	17
	22	19	20	16	16	18	18	18
5-10 years	105	91	77	77	74	72	65	80
10-15 years	136	87	98	102	82	74	85	95
15-20 years	229	178	167	160	133	125	138	161
20-25 years	193	177	1 69	136	137	136	120	152
25-30 years	120	146	139	102	89	94	94	112
30–35 years	106	78	117	62	73	64	76	82
35–40 years	98	70	69	61	73	45	62	68
40–45 years	71	75	73	49	47	49	34	57
45–50 years	52	49	58	45	49	46	37	48
50–55 years	34	34	37	33	45	32	36	36
50–55 years	50	36	31	35	37	31	22	34
60-65 years 65-70 years 70-75 years 75-90 years 80-90 years 90 and over	28 28 25 16 9	33 25 24 5 8	22 25 21 13 4	18 21 19 12 11	42 22 18 10 7	30 20 19 9 8	18 16 10 15 8	27 22 19 11 1

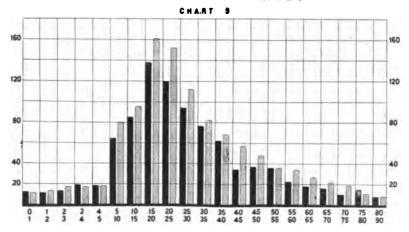
INDIANA

TYPHOID FEVER DEATHS

COMPARISON DY MONTHS



COMPARISON BY AGES



MONTHLY ANALYSIS OF TYPHOID FEVER DEATHS.

January—Fifty-two counties report 175 cases of typhoid fever, with 33 deaths. In the corresponding month last year, 273 cases were reported with 50 deaths in 40 counties. In the preceding month there were 306 cases in 47 counties, with 66 deaths.

February—Thirty-eight counties reported 117 cases, with 29 deaths. In the corresponding month last year 42 counties reported 202 cases, with 32 deaths. In the preceding month 52 counties reported 175 cases, with 33 deaths.

March—Two hundred and fifty-eight cases were reported from 46 counties, with 37 deaths. In the corresponding month last year, 197 cases in 37 counties, with 30 deaths. In the preceding month, 117 cases in 38 counties, with 29 deaths.

April—Two hundred and eleven cases reported from 62 counties. The disease was epidemic in Daviess County; which reported 11 cases, with 1 death; in Jackson, with 6 cases and 1 death, and in Parke, with 8 cases and no deaths.

May—Ninety-four cases reported from 32 counties, with 40 deaths. The disease was epidemic in the following counties: Clark, 15 cases; Vanderburgh, 11; Washington, 15.

July—Two hundred and twenty-eight cases reported, with 44 deaths, from 49 counties. In the preceding month 94 cases, with 40 deaths, in 32 counties. The disease was epidemic in the following counties: Bartholomew, Clark, Howard, Jefferson, Morgan and Wayne. In Wayne County, at Richmond, many cases of sickness of an unusual nature appeared, some doctors calling the type of disease "summer grippe." Several physicians became suspicious and blood from these patients was sent to the Laboratory of Hygiene and was found to give the Widal reaction. It is estimated there were at least 200 cases of this mild typhoid fever in Richmond in July.

August—Four hundred and forty-six cases reported from 68 counties, with 93 deaths. In the corresponding month, 228 cases reported, with 48 deaths from 49 counties. In the corresponding month last year, 360 cases, with 125 deaths from 72 counties. The disease was epidemic in Adams County, 11 cases; Clay, 18; Daviess, 14; Delaware, 12; Madison, 12; Noble, 16; Vanderburgh, 35; Wayne, 50. We have every reason to believe that the disease, almost without question, existed in every county in the state either in mild or severe form.

September—Nine hundred and seventy-seven cases reported from 76 counties, with 143 deaths. In the preceding month, 446 cases in

68 counties, with 93 deaths. In the corresponding month last year, 1,080 cases in 96 counties, with 186 deaths. The disease was epidemic in the following counties: Bartholomew, 22; Clay, 20; Daviess, 30; Fayette, 20; Howard, 25; Lawrence, 33; Marion, 60; Montgomery, 17; Vanderburgh, 23; Vigo, 20; Wayne, 17; Washington, 15; Whitley, 25.

October—Seven hundred and thirty-two cases were reported from 73 counties, with 150 deaths. In the preceding month, 977 cases reported from 76 counties, with 143 deaths. In the corresponding month last year, there were 711 cases in 72 counties, with 152 deaths. The disease was epidemic in the following counties: Bartholomew, 11 cases; Delaware, 25; Howard, 15; Jefferson, 35; Madison, 25; Montgomery, 11 Noble, 17; Parke, 14; Posey, 27; Putnam, 12; White, 17.

November—Seven hundred and ninety cases of typhoid fever were reported in 73 counties, with 135 deaths. In the corresponding month last year, 570 cases from 62 counties, with 101 deaths. Several epidemics were reported. In Daviess County there were 16 cases and 2 deaths Fayette, 10 cases and 2 deaths; Hancock, 16 cases, 1 death; Jackson, 10 cases, 2 deaths; Jay, 12 cases, 3 deaths; Lagrange, 15 cases, no deaths; Madison, 17 cases, 5 deaths; Noble, 10 cases, no deaths; Parke, 29 cases, 2 deaths; Putnam, 10 cases, no deaths; Vanderburgh, 12 cases, 1 death. We recognize from these reports that not a few cases of mild typhoid are diagnosed as malaria, diarrhoeal trouble, etc. We also recognize that many typical cases are not reported owing to thoughtlessness and disregard of the law on the part of practitioners.

December—Six hundred and seventy-four cases were reported from 50 counties, with 79 deaths. In the corresponding month last year, 712 cases from 47 counties, with 66 deaths. The disease was reported as epidemic in Clark County, 15 cases; Daviess, 17; Delaware, 24; Martin, 17; Noble, 17; Parke, 18; Spencer, 26; Union, 25; Washington, 20.

DIPHTHERIA.

Diphtheria caused 402 deaths in 1906, or 61 less than the average (463) for the last seven years. January is the most fatal month, and July the least fatal. The gradual decrease of deaths from diphtheria is largely due to the more general and earlier use of antitoxin, although the teachings and warnings of the health department must have had some good effect.

The tables giving the number of deaths by months and by ages, follow herewith:

DIPHTHERIA.

Deaths by months, with average for last seven years.

MONTHS.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average.
January	90	110	49	61	51	32	33	61
February	70 68	61 39	35 32	49 27	35 29	31 27	23 26	43
April	30	29	27	22	32	13	16	35 24
May. June.	14 13	23 23	30 16	12 16	22 18	13 8	8 12	17 15
July	15	15	7	15	10	16	11	12
August	40	24	21	23	12	15	13	21
September	64	38	39	35	11	34	36	85
October	111	74	48	69	21	82	77	69
November	125 105	56 62	63 57	- 77 56	35 38	41 54	82 65	62
Totals	745	554	424	462	314	366	402	463

DIPTHERIA

Deaths by ages, with average for last seven years.

AGES.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average.
Under 1 year	73 106 94	60 58 65 80 53	51 36 61 39 45	50 59 56 64 46	28 47 33 46 22	23 35 48 53 41	26 45 51 47 58	41 50 60 80 48
5–10 years 10–15 years 15–20 years 20–25 years 25–30 years	70 24 4	143 51 23 7 3	122 46 14 1	141 28 9 3	99 26 5 1	114 28 10 7 3	124 35 10 1	129 41 13 3
30–35 years 35–40 years 40–45 years 45–50 years 50–55 years	1	1	1	2				1
55–60 years. 60–65 years. 65–70 years. 75–80 years.	2	i		i				

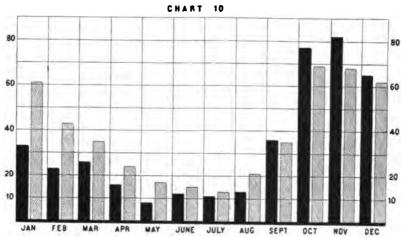
DEATHS IN INDIANA

DIPHTHERIA AND CROUP

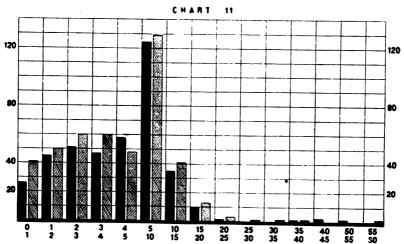
COMPARISON BY MONTHS

- 1906

- AVERAGE FOR LAST SEVEN YEARS



COMPARISON BY AGES



SCARLET FEVER.

Scarlet fever caused 101 deaths in 1906, or 41 less than the average annual number of deaths for the last seven years.

The tables given herewith and the graphic charts drawn from them, show the scarlet fever situation in Indiana:

SCARLET FEVER.

Deaths by ages, with average for last seven years.

AGES.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average.
Under 1 year. 1-2 years. 2-3 years. 3-4 years. 4-5 years.	7 17 22 20 18	7 14 29 18 22	11 13 17 24 14	13 9 17 22 19	13 27 33 25 18	10 18 20 17 14	5 13 10 15 10	9 16 21 20 16
5-10 years. 10-15 years. 15-20 years. 25-25 years. 25-30 years.	42 7 4 1	37 .8 .4 .2 .3	43 14 3 3	55 19 3 3	61 11 2 1	38 11 1 1 2	27 8 2 10	43 11 2 3
30-35 years 10-45 years 15-50 years 30-90 years		1 1 1		 1 1		-	1	
Totals	138	147	144	163	192	133	101	142

SCARLET FEVER.

Deaths by months, with average for last seven years.

MONTHS.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average.
January	17	24	22	22	24	18	11	19
February	15	18	19	13	24	11	. 9	15
March	17	27	18	10	33	20	12	1 19
April	16	18	11	' 9	22	21		1 14
May		9	5		15	11		1
June	9	12	3	. 6	9	4	10	7
July	2	5	6	13	4	14	7	7
August		5	6	8	6	6	3	5
September	5	4 1	8	13	7	Š	6	7
October	14	3	19	16	12	5	. Š	111
November	13	1Ŏ	24	18	17	11	14	15
December	20	14	~å	34	19	**		iš

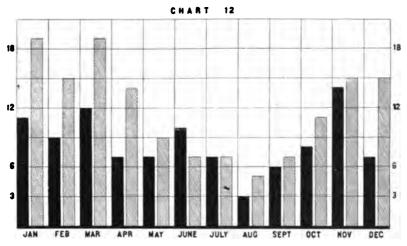
INDIANA

SCARLET FEVER DEATHS

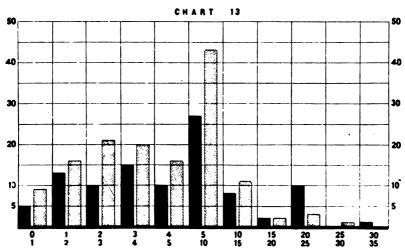
COMPARISON BY MONTHS

- 1906

M - AVERAGE FOR LAST SEVEN YEARS



COMPARISON BY AGES



DIARRHOEAL DISEASES.

The diarrhoeal deaths under five years of age numbered 1,823, which is 83 more than the average for the last seven years. That diarrhoeal diseases are fatal mostly in infancy and old age plainly appears in the table following.

The tables and charts show the status of the disease under the conditions and for the periods and ages stated:

DIARRHOEAL DISEASES, UNDER FIVE YEARS OF AGE.

Deaths by months, with average for last seven years.

MONTHS.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average
January	19	14	15	11	29	26	28	20
February	11 21	12 17	14 14	22 20	30 33	30 36	25 29	20
April	13	26	21	17	24	22	39	22
May	32	19	29	25	29	35	42 71	30
June	111	81	116	83	54	116	71	90
July	480	468	455	323	307	359	321	387
August	627	500	569	475	498	469	484	517
September	436	393	337	275	344	343	447	369
October	198	167	130	140	204	186	232	179
November	80	64	56	36	49	54	66	58
December	21	15	23	22	28	24	39	24
Totals.	2,049	1,776	1,779	1,449	1.629	1,700	1.823	1,740

DIARRHOEAL DISEASES, FIVE YEARS OF AGE AND OVER,

Deaths by months, with average for last seven years.

MONTHS.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average
January. February. March April May. June.	27 22 32 21 26 15	30 22 24 17 28 31	25 23 28 28 30 25	24 20 27 23 40 36	30 38 37 28 33 30	32 29 42 27 28 44	26 36 35 41 30 29	2 2 3 2 3
July. August. September October. November. December.	139 137 118 69 36 26	130 169 123 72 39 42	129 170 86 59 39 27	93 131 116 64 26 22	73 110 104 63 32 33	87 152 94 67 28 28	78 119 130 92 39 40	10 14 11 0 3
Totals	668	727	669	622	611	658	695	60.

DIARRHOEAL DISEASES

COMPARISON BY MONTHS

- 1906

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AVERAGE FOR LAST SEVEN YEARS

OCT

CHART 14

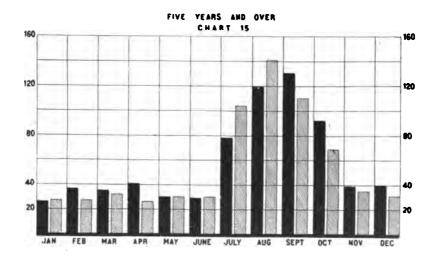
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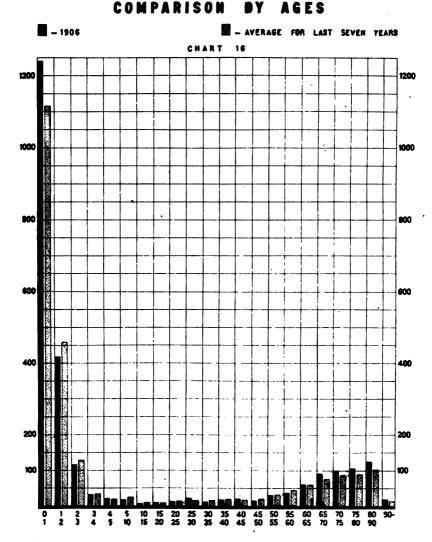
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DIARRHOEAL DISEASES

Deaths by ages, with average for last seven years.

AGES.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average.
Under 1 year	534 152 44	1,118 513 139 28 17	1,070 533 140 34 13	894 421 110 19	1,068 384 112 40 21	1,115 406 130 36 13	1,240 417 116 81 20	1,115 458 128 33
5-10 years 10-15 years 5-20 years 20-25 years 25-30 years	. 8 . 11	36 9 13 15 13	23 8 7 14 15	12 11 6 9 12	31 13 4 15 13	29 10 8 17 16	17 6 8 12 21	24 8 7 18 14
90-35 years 35-40 years 40-45 years 50-50 years 50-55 years	19 22 21	32 18 13 22 31	12 28 14 20 30	20 14 15 24 36	14 15 19 19 33	10 22 20 13 25	10 17 19 14 30	15 19 17 19 31
55-00 years 50-65 years 15-70 years 15-70 years 75-80 years 80-90 years 90-90 years	63 77 82 69	46 62 91 70 83 107	57 60 73 80 98 102	37 45 67 98 91 94 14	37 57 68 88 88 89 12	51 72 68 93 95 104	87 59 90 99 107 124 18	44 59 76 87 89 102
Totals	2,653	2,498	2,442	2,060	2,240	2,366	2,512	2,389

DEATHS IN INDIANA DIARRHOEAL DISEASES



INFLUENZA.

Influenza caused 224 deaths in 1906, which is a large decrease as compared with the average (477) for the last seven years. However, the disease existed, but not in epidemic form, in every county in the state, deaths occurring in 73 counties. The northern sanitary section was freer from the disease and had fewer deaths than either the central or southern section. The tables and charts herewith show the status of the disease:

INFLUENZA.

Deaths by months, with average for last seven wars.

MONTHS.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average.
January February March April May June	53 70 98 101 34 19	269 349 180 128 42 12	60 84 51 37 15	31 51 87 60 37	45 90 146 70 20 7	114 221 151 37 15	53 44 48 30 7 2	85 125 106 66 24
July. August. September October. November. December.	12 4 1 13 8 11	10 3 5 12 30	8 3 7 8 8	7 9 3 7 10	2 5 1 4 18 26	5 4 4 12 21	4 2 3 8 11 12	11 22
Totals	424	1,049	302	348	434	591	224	477

INFLUENZA.

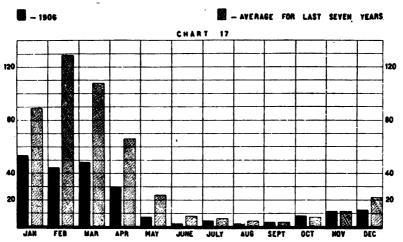
Deaths by ages, with average for last seven years.

AGES.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average.
Under 1 year. 1-2 years. 2-3 years. 3-4 years. 4-5 years.	35 7 3 1 2	66 14 11 5 4	47 7 4 4	13 3 3 2 2	32 4 1 1 4	43 10 6	14 3 5	35 7 4 2 2
5-10 years 10-15 years 15-20 years 20-25 years 25-30 years	7 2 3 5 13	11 6 12 20 22	9 4 3 4 2	2 6 3 4 5	3 7 6 3 8	5 4 7 16 3	2 3 4 3	5 4 5 8 7
30-35 years 35-40 years 40-45 years 45-50 years 55-50 years 55-60 years	7 9 17 17 8 15	22 27 33 33 43 41	2 6 1 6 12 14	5 6 7 16 16	7 7 6 13 9	9 9 16 14 17 32	2 4 3 10 13 6	9 11 14 17 10
60-65 years 65-70 years 70-75 years 75-80 years 80-90 years 90 and over	23 47 59 55 83	57 103 159 151 180 26	5 35 35 39 51 7	28 27 53 58 74 9	22 37 73 61 94 15	40 47 67 86 132 23	11 24 31 31 43 8	26 45 68 68 94 12

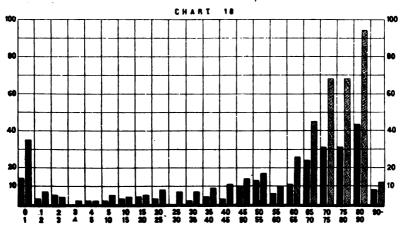
INDIANA

INFLUENZA DEATHS

COMPARISON BY MONTHS



COMPARISON BY AGES



SMALLPOX.

This disease prevailed throughout the year, but usually in very mild form. It was epidemic in a few localities, as shown in the monthly analyses appended. The deaths numbered 8, as against 35 in 1905, said deaths occurring, two in Marion County, four in Jefferson County, and two in Sullivan County.

SMALLPOX.

Table giving number of deaths by months for the last seven years.

Months.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Total.	for sever years.
lanuary. February. March April May.	1 4 2 3 3 2 2 2	2 2 4 1 3 3	4 2 3 8 1 2	51 55 31 21 10 3	8 8 8 6 7 3	7 11 3 8 3 4	1	73 79 46 43 26 17	10 11
fuly August. September. October November. December	2	1 2 1 1	15 1 7 10 4 18	1 14 2 1 3	6 3 17 18 13 8	3	2' 3	33 18 31 33 19 32	
Total	19	21	75	195	97	35	8	450	

State rate 168 2.

MONTHLY ANALYSIS.

Eighty cases of smallpox were reported in 10 counties, namely: Allen, 52; Elkhart, 1; Kosciusko, 2; Lawrence, 1; Scott, 4; Switzerland, 9; Tippecanoe, 2; Wayne, 1; Whitley, 1. There were no deaths from this disease during the month. The epidemic in Allen County presented no severe cases and no deaths. In the corresponding month last year 238 cases of smallpox, with 7 deaths in 27 counties, were reported.

February—One hundred and fifty-two cases of smallpox were reported in 15 counties, with no deaths. In the corresponding month last year, 381 cases in 35 counties, with 8 deaths. In the preceding month, 80 cases in 10 counties, with no deaths. The disease was epidemic at Fort Wayne in Allen County—62 cases in all. It was also epidemic in one locality in Cass County, 5 cases; epidemic in Clark, 17 cases; epidemic in Crawford, 16 cases; epidemic in Floyd, 14 cases; in Fulton, 8 cases, somewhat distributed; Howard, 5 cases, somewhat distributed; Jackson, 3 cases in one locality; Jay, 1 case; Miami, 5; Perry, 2; Putnam, 1; Switzerland, 5; Tippecanoe, 1; Wells, 1.

March—One hundred and twenty-four cases were reported in 16 counties, with no deaths. In the corresponding month last year, 251 cases in 29 counties, with one death. In the preceding month, 152 cases in 15 counties, with no deaths. The disease continued epidemic from last month in Allen County, 38 cases being reported. It was also epidemic in Clark, 8 cases; Crawford, 16; Floyd, 13; Laporte, 14; Miami, 8; Whitley, 10. In other counties the cases were: Boone, 1; Clinton, 1; Fulton, 3; Greene, 1; Marion, 7; Martin, 1; Putnam, 1; Spencer, 1; Vigo, 1.

April—Ninety-seven cases reported from 11 counties, with no deaths. In the corresponding month last year, 151 cases in 18 counties, with 4 deaths. In the preceding month, 124 cases in 16 counties, with no deaths. The disease was epidemic in mild form in the following counties: Adams, 15; Allen, 20; Clark, 18; Floyd, 7; Huntington, 7; Marion, 9; Miami, 15. A few cases not epidemic occurred in the following counties: Clinton, 1; Daviess, 1; Greene, 3; Howard, 7.

May—One hundred and twelve cases reported from 14 counties, with no deaths. In the corresponding month last year, 125 cases of smallpox were reported from 11 counties, with 2 deaths. The counties reporting this disease were as follows: Adams, 10; Allen, 44; Clark, 10; Crawford, 2; Fayette, 1; Floyd, 12; Fulton, 1; Henry, 1; Marion, 4; Miami, 2; Putnam, 1; Vanderburgh, 5; Vigo, 1; Washington, 20.

June—Sixty-three cases reported from eight counties, with no deaths. In the corresponding month last year, 114 cases in 13 counties, with 4 deaths. In the preceding month, 112 cases in 14 counties, with no deaths. The disease was epidemic in Adams County, 14 cases; Allen, 17 cases; Miami, 11 cases; Shelby, 10 cases. Other counties had the following number of cases: Carroll, 2; Floyd, 2; Grant, 2; Jay, 9; Vigo, 2. All of the cases reported were very mild. In no instance was it reported in severe form.

July—Eighteen cases reported from six counties, with one death. The said death was an infant three days old, which was born broken out with the disease. The mother had recovered from a mild attack and had been dismissed from the pest house in Jefferson County. The following counties reported the disease present: Allen, 9 cases; Clark, 1; Jay, 2; Jefferson, 2 cases and 1 death; Shelby, 4, and Vanderburgh, 6. It is very probable this does not represent all of the cases, for we are certain scores of cases of mild smallpox have occurred during this month. In Pulaski County, at Monterey, 100 cases of a mild eruptive disease have occurred. Many phy-

30-Bd. of Health.

sicians unhesitatingly pronounced this smallpox, while others have termed it "mixed infection." The cases are so mild, and as no deaths have occurred, it has been impossible to establish effective quarantine or to induce the people to vaccinate.

August—Forty cases reported from three counties, with no deaths. The following counties reported the disease present: Fulton, 10 cases; Miami, 10 cases; Pulaski, 20 cases. It is very certain this does not represent all of the cases, for, without doubt, many mild attacks have escaped diagnosis. After seven years of smallpox in the state, very many physicians are found who fail to diagnose the disease in mild form.

September—Fifty-one cases reported from ten counties, with two deaths. The counties reporting the disease present were: Fulton, 6 cases; Jefferson, 16; Johnson, 1; Miami, 4; Montgomery, 3; Shelby, 5; Starke, 6; St. Joseph, 1; Sullivan, 8, with two deaths; Wabash, 1 case. We are again compelled to remark that these figures do not tell the whole story except as to deaths, for, without doubt, many mild attacks have escaped diagnosis and many people have had the disease without even seeing a physician.

October—There were 118 cases reported from nine counties, with three deaths. In the same month last year there were no cases of smallpox, and of course no deaths. The counties reporting the disease present this month were: Allen, 2 cases; Delaware, 1; Fulton, 3; Jefferson, 61; Lagrange, 8; Miami, 3; Ripley, 1; St. Joseph, 28; Vigo, 1. The three deaths occurred in Jefferson County. As remarked every month, it is true that there were cases of this disease which were never reported.

November—There were 216 cases reported from 14 counties, with no deaths. In the same month last year there were 112 cases in 13 counties, with 1 death. The following counties reported the disease present: Clark, 1 case; Daviess, 1; Fulton, 3; Grant, 2; Henry, 1; Jefferson, 83; Jennings, 1; Marshall, 4; Miami, 60; Pulaski, 17; Ripley, 2; Starke, 6; St. Joseph, 33. Although seven years have elapsed since smallpox first appeared in this state, and although it has been present every week in the state in that time, still there are physicians who can not diagnose this disease when it appears in mild form. Mistakes in this respect seem no fewer than were made seven years ago.

December—There were 393 cases reported from 19 counties, with 1 death. In the same month last year, 112 cases from 13 counties, with 1 death. There is a decided increase in cases and a slight increase in area of prevalence. The following counties reported the

disease as present: Allen, 1; Benton, 1; Cass, 2; Clark, 1; Daviess, 1; Elkhart, 2; Fulton, 65; Grant, 5; Howard, 2; Jasper, 2; Jefferson, 62; Marion, 5, and 1 death; Marshall, 8 cases; Miami, 62; Pulaski, 34; Starke, 16; St. Joseph, 12; Wabash, 3; Washington, 8.

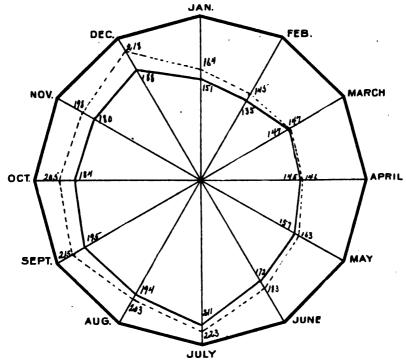
VIOLENCE.

The violence deaths numbered 2.210, as against 2,050 in 1905. The term violence includes accidents, suicides and homicides. The accidental deaths numbered 1,836; the suicides, 281, and the homicides, 93. No deaths by mob violence in 1906, and but 1 in 1905. Steam cars, trolley cars and machinery killed 834.

The Violence Chart following compares the violence deaths with the average for the last seven years, and by it it appears there was a decided increase in violence deaths over preceding years.

VIOLENCE.

Comparison of 1906 with average of the last seven years:



Average deaths per month for seven years, 1900–1906. Deaths per month for the year 1906. Eleven months show more than average.

One month shows same as average.

MONTHLY RECORD OF VIOLENCE DEATHS. .

January—Violence: Of the 122 deaths by violence, 5 were murders, all males and all killed by shooting. The suicides numbered 31, 12 being females and 19 males. Concerning the methods of suicide. 4 chose hanging, 3 males and 1 female; 1 chose drowning; 5 gunshots; 1 cutting throat; 12 carbolic acid; 4 morphine and the remainder by other poisons. Of the 196 accidental deaths, 76 were males and 20 females. Railroads caused the deaths of 31 males, and other causes were as follows: Fractures and crushing injuries, 17; gunshots, 6; burns and scalds, 11; drowning, 8; falls and falling objects, 9; mine accidents, 3; electricity, 3; suffocation and poisoning, the remainder.

February—The deaths by violence numbered 109—84 males and 25 females. There were 5 murders, 20 suicides and 89 accidental deaths. Of the 5 murders, 3 were males and 2 were females. Two of these were by gunshots, one by knife wound, one by homicide and one by blow on the head. Of the suicides, 14 were males and 6 females. The methods chosen were: 7 males, gunshots; 2 males, hanging; by opium and its compounds, 2 males and 4 females; chloral, 1 female; carbolic acid, 2 males and 1 female; not named, 1 male. Of the accidental deaths, 20 were caused by railroads, 2 by interurban trolley cars, 12 by crushing injuries, 19 by burns and scalds, 5 by gunshots, horses and vehicles, 1; explosions, 7; falling trees, 2; strangulation, 3; frozen to death, 1; dog bite, 1; poison by drugs, 3; not named, 8.

Note.—It will be observed that death rates this month in comparison with the preceding month are higher, although the number of deaths were fewer. This is because there were three more days in January than in February.

March—The deaths by violence numbered 112, 20 females and 92 males. Of the violence deaths, 7 were murders, 20 suicides and 94 accidents. Of the suicides, 9 chose gunshots, 3 hanging, 5 carboliacid, 3 poisons. Of the accidental deaths, railroads caused 18; street cars and interurbans, 3; crushing injuries, 21; burns and scalds, 12; drowning, 6; gunshots, 8; mine accidents, 6; falls, 7; poisons, 6; other methods, 7.

April—The deaths by violence numbered 124, 85 males and 39 females. There were 2 murders, 28 suicides and 94 accidents. Seventeen were killed on steam railroads, 2 on interurbans, 19 by burns and scalds, 10 by drowning, 7 by asphyxiation, 3 by horses, and others in various ways.

May—Deaths by violence numbered 152, an increase over the preceding month of 28, and an increase of 12 over the corresponding month last year. Of the deaths by violence, 8 were murders, 25 suicides and the remainder accidental. Of the suicides, 9 chose carbolic acid, 3 morphine, 4 potash and other poisons, 4 gunshots, and 5 hanging. Of the accidental deaths, 14 were caused by railroads, 1 by trolley cars, 30 by crushing injuries, 11 by burns and scalds, 5 by gunshots, 13 by drowning. 5 by horses and vehicles, poisoning 12, lightning 4, rat-bite 1, not named 7.

June—The deaths by violence numbered 164. In the corresponding month last year, 160. There were 5 murders, 35 suicides, and the remainder accidental. Of the 5 murders, 1 was a woman. Of the suicides, 11 were males, and all chose gunshots; 4 chose hanging, 2 cutting throat, 1 stepping in front of train, and 17 various poisons. Of the accidental deaths, steam railroads killed 26; trolley cars, 5; drowning, 24; various crushing and falling injuries, 29; poisons, 4; horses and vehicles, 4; burns and scalds, 7; electricity, 2; lightning, 4; shooting and other causes, 13.

July—The violence deaths numbered 208. Of these 7 were murders, 13 suicides, and the remainder accidents. Of the murders, 5 were caused by gunshots and one by fracture of skull. Of the suicides, 1 chose gun; 2, hanging; 1, cutting throat; 1, drowning; 2, carbolic acid; 2, strychnine, and 4, morphine. Of the accidental deaths, 36 occurred on steam railroads and 4 on street cars and interurbans. Burns and scalds caused 18 deaths; drowning, 32; gunshots, 6; explosions, falls and like accidents, 39; horses and vehicles, 6; ptomaine poisoning, 3; other poisons, 5; suffocation, 7; lightning, 7; sunstroke, 8; mining accidents, 6; forceps delivery, 3. Cancer caused 108 deaths. This cause of death is recorded more frequently than typhoid fever, diphtheria and scarlet fever.

August—The violence deaths numbered 198. Of these, 7 were murders, 24 suicides, and the remainder accidental. Of the suicides 6 chose shooting and were all men; 7 chose carbolic acid, 2 men and 5 women; 3 chose morphine; 2, concentrated lye; 6, burning, drowning, hanging and cutting throat. Of the accidental deaths, 42 were caused by steam railroads; 4 by trolley cars; 19, crushing injuries; 9, burns and scalds; 8, gunshots; drowning, 25; falls, 11; falling objects, 2; horses and vehicles, 7; lightning and electricity, 9; machinery, 4; sunstroke and heat exhaustion, 5; and the remainder in various ways.

September—The violence deaths numbered 195, against 198 in the preceding month. Of these, 15 were murders, 26 suicides and the

remainder accidental. Of the murders, 3 were females and 12 males. Four were killed by blows, fractured skull following; 7 by gunshots and 4 in various other ways. Of the suicides, 5 chose morphine, 3 women and 2 men; 3 chose carbolic acid, 2 women and 1 man; 6 chose hanging, 2 women and 4 men; 7 chose shooting, 1 woman and 6 men; the remainder chose other methods. Of the accidental deaths, 36 were caused by steam cars, 4 females and 32 males; 7 were caused by street cars and interurbans, 1 female and 6 males; 13 were caused by burns and scalds, 10 females and 3 males; 6 were caused by gunshots, 2 females and 4 males; 32 were killed by various other accidents—8 by horses and vehicles, 8 by suffocation, 11 by drowning, 8 by electricity and lightning, 7 by poison with chemicals, 8 by ptomaine poisons, 1 by headache tablets, and the remainder in various ways.

October—The violence deaths numbered 179. In the corresponding month last year, 155 deaths. The causes were as follows: Seven murders, 22 suicides, and the remainder accidents. Of the suicides, 2 chose hanging, 5 gunshots, 1 asphyxiation, 1 strychnine, 1 cutting, the rest using various methods. The railroads killed 35; trolleys and interurbans, 4; crushing injuries, 18; burns and scalds, 8; fire, gas and powder, 9; drowning, 7; gunshots, 12; mining accidents, 4; falls, 15; horses and vehicles, 8; strangulation, suffocation and other causes killed the remainder.

November—The violence deaths numbered 184. In the corresponding month last year, 159. The causes were as follows: Murders, 7; suicides, 32; accidents, 145. Of the suicides, 4 chose gunshots; 3, cutting; 8, hanging; 1, drowning; 5, carbolic acid; 2, arsenic; 4, morphine; 4, other poisons; 1, artificial gas. Of the accidental deaths, steam railroads killed 41, street cars and interurban cars, 4; fractures of skulls, of large bones and crushing injuries, 16; burns and scalds, 30; gunshots, 8; drowning, 4; falls, 12; mining, 2; machinery, 3; suffocation and strangulation, 7; asphyxiation and artificial gas, 2; electricity, 5; vehicles, 2; poison, 7; hanging, 1.

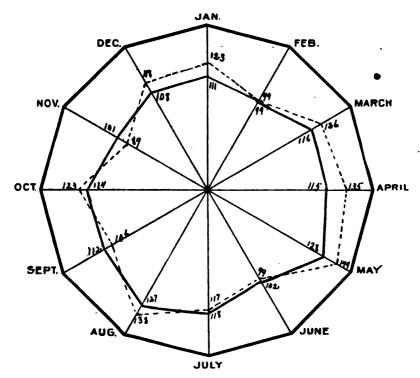
December—The violence deaths numbered 185. In the corresponding month last year, 137. The causes were as follows: Murder, 11; suicides, 28; accidental, 146. Of the murders, gunshots, 8; stabbing, 3. Of the suicides, arsenic, 3; morphine, 4; carbolic acid, 7; shooting, 5; cutting throat, 2; hanging, 4; drowning, 2; jumping from high window, 1. Of the accidental, steam railroads killed 40; street cars and interurbans, 7; crushing injuries, 14; machinery, 7; burns and scalds, 14; gunshots, 16; drowning, 4; falls, 11; horses and vehicles, 3; asphyxiation, 11; mining, 4, and the remainder by various methods.

CANCER.

Cancer is an increasing cause of death in Indiana. The chart following shows this to be true. The number of cancer deaths in 1906 was 1,417, the rate being 53.5 per 100,000. Six years ago cancer and typhoid caused about the same number of deaths annually, but typhoid is now decreasing, the rate being 34.4 per 100,000, which is 19.1 less than the cancer rate. The cancer, tuberculosis and typhoid map on page —— shows the ratio of cancer by congressional districts, and examination of the same will discover the fact that cancer prevails to a greater degree in the northern centers than in the central or southern.

CANCER.

Comparison of 1906 with average of the last seven years:



Average deaths per month for seven years, 1900–1906 Deaths per month for the year 1906. Seven months show more than average. Four months show less than average. One month shows same as average.

MONTHLY ANALYSIS OF DISEASE PREVALENCE.

January—The most prevalent maladies were bronchitis and tonsilitis. Influenza was most prevalent in January of last year. Pneumonia, which had second place in January, 1905, has fourth place this January. The order of prevalence was as follows: Bronchitis, tonsilitis, rheumatism, pneumonia, scarlet fever, influenza. typhoid fever (enteric), diphtheria and membranous croup, pleuritis, diarrhoea, whooping cough, ntermittent and remittent fever, erysipelas, measles, inflammation of bowels, typho-malaria fever, cerebro-spinal meningitis, cholera morbus, dysentery, smallpox, puerperal fever, cholera infantum.

February—The most prevalent malady was pneumonia; 78 per cent. of the regular observers testified to this effect. Pneumonia was fourth in area of prevalence in the preceding month. In the corresponding month last year, pneumonia was second in area of prevalence. The order of prevalence was as follows: Pneumonia, tonsilitis, bronchitis, rheumatism, influenza, scarlet fever, pleuritis, typhoid fever (enteric), diphtheria and membranous croup, whooping cough, intermittent and remittent fever, diarrhoea, erysipelas, measles, inflammation of bowels, smallpox, dysentery, puerperal fever, typho-malaria fever, cholera morbus, cerebro-spinal meningitis, cholera infantum.

March—The most prevalent malady was tonsilitis. Pneumonia was reported as the most prevalent in the preceding month. In the corresponding month last year influenza led as most prevalent. The order of prevalence was as follows: Tonsilitis, pneumonia, bronchitis, influenza, rheumatism, pleuritis, whooping cough, scarlet fever, typhoid fever (enteric), intermittent fever, diarrhoeal, erysipelas, measles, diphtheria and membranous croup, smallpox, puerperal fever, inflammation of bowels, typho-malaria fever, cerebrospinal meningitis, dysentery, cholera morbus, cholera infantum.

April—The most prevalent malady was tonsilitis. This was also the case in the preceding month. The order of prevalence was as follows: Tonsilitis, rheumatism, pneumonia, bronchitis, influenza, scarlet fever, whooping cough, intermittent and remittent fever, measles, pleuritis, diarrhoea, typhoid fever (enteric), erysipelas, diphtheria and membranous croup, inflammation of bowels, cerebro-spinal meningitis, typho-malarial fever, smallpox, cholera morbus, puerperal fever, dysentery, cholera infantum.

May—Rheumatism was reported as the most prevalent malady. Tonsilitis was reported first in the preceding month. The order of prevalence was as follows: Rheumatism, tonsilitis, bronchitis, diar-

DEATHS IN INI TUBERCULOS FEVER, FOR

COMGRESS- ROMAL DESTRICTS.	Population. Census 1900.	
First	197,984	
Second	203,118	
Third	183,729	
Fourth	180,712	
Pytch	206,682	
Stath	188,925	
Seventh	219,655	
Eighth	245,798	
Ninth	207,404	
Tenth	215,485	
Eleventh	207,234	
Twelfth	179,504	
Thirteenth	212,834	
Totals and Averages.	2,648,549	1

rhoea, whooping cough, influenza, measles, scarlet fever, intermittent and remittent fever. typhoid fever (enteric), pneumonia, pleuritis, inflammation of bowels, erysipelas, diphtheria and membranous croup, cholera morbus, smallpox, dysentery, cholera infantum, typho-malaria fever, cerebro-spinal meningitis, puerperal fever.

June—The most prevalent malady was rheumatism, which was also most prevalent in the corresponding month last year. In the preceding month, tonsilitis was first. The order of prevalence was as follows: Rheumatism, diarrhoea, tonsilitis, bronchitis, intermittent and remittent fever, cholera morbus, typhoid fever (enteric), scarlet fever, whooping cough, cholera infantum, dysentery, measles, inflammation of bowels, pneumonia, pleuritis, diphtheria and membranous croup, influenza, crysipelas, smallpox, typho-malaria fever, cerebro-spinal meningitis, puerperal fever.

July—The most prevalent malady was diarrhoea. Rheumatism was most prevalent in both May and June. Cholera morbus, which was seventh in June, rose to sixth place in July. The order of prevalence was as follows: Diarrhoea, cholera morbus, tonsilitis, rheumatism, dysentery, cholera infantum, typhoid fever (enteric), intermittent and remittent fever, inflammation of bowels, bronchitis, scarlet fever, whooping cough, diphtheria and membranous croup, erysipelas, pleuritis, typho-malarial fever, pneumonia, measles, influenza, cerebro-spinal meningitis, smallpox, puerperal fever.

August—The most prevalent malady was diarrhoea, as was also the case in the preceding month. Rheumatism, which was most prevalent in May and June, falls to fifth place in August. The order of prevalence was as follows: Diarrhoea, cholera morbus, typhoid fever (enteric), cholera infantum, rheumatism, tonsilitis, dysentery, intermittent and remittent fever, bronchitis, inflammation of bowels, scarlet fever, typho-malaria fever, influenza, diphtheria and membranous croup, pleuritis, pneumonia, whooping cough, erysipelas, cerebro-spinal meningitis, measles, puerperal fever, small-pox.

September—The most prevalent malady was cerebro-spinal meningitis. Rheumatism was reported as very prevalent. The order of prevalence was as follows: Cerebro-spinal meningitis, rheumatism, tonsilitis, diarrhoea, typhoid fever (enteric), cholera morbus, cholera infantum, bronchitis, dysentery, intermittent and remittent fever, diphtheria and membranous croup, inflammation of bowels, pneumonia, scarlet fever, influenza, typho-malarial fever, pleuritis, erysipelas, smallpox, whooping cough, measles, puerperal fever.

October—The most prevalent malady was tonsilitis, as against rheumatism in the preceding month and against typhoid fever in the corresponding month last year. Typhoid fever was second in prevalence. The order of prevalence was as follows: Tonsilitis, typhoid fever, rheumatism, bronchitis, diphtheria and membranous croup, intermittent and remittent fever, scarlet fever, influenza, diarrhoea, pneumonia, pleuritis, inflammation of the bowels, erysipelas, typho-malaria fever, cholera infantum, cholera morbus, dysentery, whooping cough, smallpox, measles, cerebro-spinal meningitis and puerperal fever.

November—The most prevalent maladies were tonsilitis and bronchitis, as against tonsilitis and typhoid fever in the preceding month. Bronchitis and tonsilitis were also the most prevalent diseases in the corresponding month last year. The order of prevalence was as follows: Tonsilitis, bronchitis, rheumatism, pneumonia, typhoid fever (enteric), influenza, diphtheria and membranous croup, intermittent and remittent fever, scarlet fever, pleuritis, diarrhoea, erysipelas, inflammation of the bowels, whooping cough, typho-malaria fever, smallpox, dysentery, measles, cholera infantum, cerebro-spinal meningitis, cholera morbus, puerperal fever.

December—As in the preceding month, tonsilitis and bronchitis were the most prevalent maladies. Indeed, there is little change in December as compared with November in regard to disease prevalence. The order of prevalence was as follows: Tonsilitis, bronchitis, rheumatism, pneumonia. influenza, typhoid fever (enteric), diphtheria and membranous croup, pleuritis, scarlet fever, diarrhoea, intermittent and remittent fever, erysipelas, measles, inflammation of the bowels, smallpox, whooping cough, typho-malaria fever, dysentery, cholera morbus, cerebro-spinal meningitis, cholera infantum.

TABLES

OF

ANNUAL STATISTICAL REPORT

FOR THE YEAR 1906.

TABLE 1.

Deaths in Indiana During the Year Ending December 31, 1906, Statistically Classified by the International System, with Rates Per 100,000 l'opulation, Estimated According to United States Census Bureau.

Clamification Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate Per 100,000.
	I. GENERAL DISEASES—EPIDEMICS.		
1 2	Typhoid fever Exanthematous typhus	913	34.4
2 3 4 5	Recurrent fever. Intermittent and malarial fever. Variola or smallpox.	102 8	3.8
6 7 8 9 9a	Measies. Searlatina. Whooping cough. Croup Diphtheria.	23 101 · 157 24 378	3.8 5.9 9
10 11	Influensa. Miliary fever.	224	8.4
12 13 14	Asiatic cholers. Cholera nostras. Dysentery.	18 235	.6 8.8
15 16	Bubonic plague Yellow fever		
17 18 19	Leprosy . Erysipelas Other epidemic diseases .	86 7	3.2
20 21	Purulent septicemia and infection. Glanders and farcy.	227	8.5
22 23 24	Malignant pustule and anthrax. Rabies. Actinomycosis trichinosis, etc.		.07
25 26 27 28 29	Pellegra. Tuberculosis of the larynx Tuberculosis of the lungs. Tuberculosis of the meninges. Abdominal tuberculosis.	3,796 185	2.1 143.2 6.9 8.8
30 31 32 33 34	Potta' disease. Cold abecess. White swelling. Other tuberculous affections General tuberculous	19 3 17 67 77	.7 .1 .6 2.5 2.9

CAUSES OF DEATH.	Number of Deaths.	Death Rate Per 100,000
Serofula. Syphilis.	75	2.8
Soft chancre. Gonorrhea (5 years and over)	2	.07 .03
Cancer and other tumors of the buccal cavity. Cancer and other tumors of the stomach and liver. Cancer and other tumors of the peritoneum, intestines and rectum Cancer and other tumors of the female genital organs. Cancer and other tumors of the breast.	57 504 133 213 118	2.1 19.0 5.0 8.0 4.4
Cancer and other tumors of the skin. Cancer and other tumors of other organs. Other tumors. Acute articular rheumatism. Chronic rheumatism and gout.	301	3.4 11.3 1.4 5.4 4.8
Scurvy. Diabetes. Exophthalmic goitre. Addison's disease. Leukemia.	269 22 11 23	10.1 .8 .4 .8
Anemia chlorosis. Other general diseases Alcoholism, acute and chronic. Chronic lead poisoning. Other chronic poisonings (occupational). Other chronic poisonings.	93 83 96 2 1 13	3.5 1.2 3.6 .07 .03
II. LOCAL DISEASES—DISEASES OF THE NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE. Encephalitis. Simple meningitis. Epidemic cerebro-spinal meningitis. Progressive locomotor ataxis. Other diseases of the spinal cord.	78 240 481 58 136	2.9 9.0 18.1 2.1 5.1
Congestion and hemorrhage of the brain. Softening of the brain. Paralysis, cause unspecified. General paralysis. Other forms of insanity.	1,496 102 777	56.4 3.8 29.3 3.2 3.0
Epilepsy. Convulsions (not puerperal) Convulsions of Infants Tetanus		4.9 .5 9.5 2.4
Chores.	7 134 1 16	5.0 .03 .6
Other nervous diseases. Diseases of the eye. Diseases of the ear.		
Diseases of the ear. III. Diseases of the Circulatory System.	70	
Diseases of the ear	58 105 2,208 243 239	2.1 3.9 83.3 9.1 9.0

Classification Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate Per 100,000.
	IV. Diseases of the Respiratory System.		
87 88 89 90	Diseases of the nasal force. Diseases of the tarynx. Diseases of the thyroid body. Acute bronchitis.	4 39 6 265	1.4 .2 10.0
91 92 93 94	Chronic bronchitis Broncho-pneumonis. Pneumonis. Pleurisy.	195 576 2,478 74	7.3 21.7 93.5 2.7
95 96 97 98 99	Congestion and apoplexy of the lungs. Gangrene of the lungs. Asthma. Pulmonary emphysema. Other diseases of the respiratory system (phthisis excepted).	338 10 105 5 107	12.7 .3 3.9 .1 4.0
	V. DISEASES OF THE DIGESTIVE STSTEM.		
100 101 102 103 104	Diseases of the mouth and adnexa. Diseases of the pharynx. Diseases of the esophagus. Ulcer of the stomach. Other diseases of the stomach (cancer excepted).	24 42 6 69 630	1.5 2.6 23.7
105a 105a 106 107 108	Diarrhoea and enteritis (under 5 years of age) Chronic diarrhoea Diarrhoea and enteritis (five years and over) Intestinal parasites Hernia and intestinal obstructions	1,823 115 327 4 295	68.8 4.3 12.3 .1 11.1
109 110	Other diseases of the intestines.	140 4	5.2 .1
111 112 113	Acute yellow strophy of the liver. Hystid tumors of the liver. Cirrhoeis of the liver. Biliary calculi.		9.8 2.7
114 115 116 117 118	Other diseases of the liver Diseases of the spicen Simple peritonitis (not puerperal). Other diseases of the digestive system. Appendicitis and abscess of the iliac foesae.	252 9 265 4 174	9.5 .3 10.0 .1 6.5
	VI. DISEASES OF THE GENITO-URINARY SYSTEM.		
119 120 121 122 123	Acute nephritis Bright's disease. Other diseases of the kidneys and their adnexa. Calculi of the urinary tract. Diseases of the bladder.	230 1,549 55 8 102	8.6 58.4 2.0 .3 3.8
124 125 126	Diseases of the urethra. Diseases of the prostate. Diseases of the male genital organs.	6 57	2.1 2.1
126 127 128	Diseases of the male genital organs. Metritis. Uterine hemorrhage (non-puerpersi).	4 7	.1 .2
129 130 131 132 133	Uterine tumor. Other diseases of the uterus. Cysts and other ovarian tumors Other diseases of the female genital organs. Non-puerperal diseases of the breast	29	1.0 1.2 .7 .7
	VII. PUERPERAL DISEASES.		
134 135 136 137	Accidents of pregnancy. Puerperal hemorrhage. Other accidents of labor. Puerperal accidents.	44 23 14 145	1.6 .8 .5

Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate Per 100,000
138 139 140 141	Albuminuria and puerperal eclampsia. Phigmasia alba dolena, puerperal. Other puerperal accidents. Puerperal diseases of the breast.	61 1 81	2.3 .01 1.1
	VIII. DISEASES OF THE SKIN AND CELLULAR TISSUES.		
142 143 144 145	Gangrene. Carbuncle. Acute abscess phlegmon. Other diseases of the skin and adnexa.	113 14 22 21	4.2 .5 .8 .7
	IX. DISEASES OF THE LOCOMOTOR SYSTEM.	1	
146 147 148 149	Affections of the bones Arthritis and other diseases of the joints Amputation One diseases of the organs of locomotion	39 3 1	1.4 .1 .03
	X. Malformations.	1	
150	Malformations	284	10.7
	XI. DISEASES OF INPANCY.	· }	
151 152 153	Congenital debility, icterus Other diseases of early infancy Lack of care	1,143 73 550	43 1 2.7 20.7
	XII. DISEASES OF OLD AGE.	•	
154	Senile debility	1,280	47.1
	XIII EXTERNAL CAUSES.	i	
	A.—Suicides.	i	
155 156 157 158 159	Suicide by poleon Asphyxia. Hanging or strangulation. Drowning. Firearms.	139 3 49 13 82	5.2 .1 1.8 .4 3.0
160 161 162	Cutting instruments. Jumping from high places Crushing. Other suicides.		.5 .03
163	Other suicides	20	.7
	B.—Accidents.	·	
164	Fractures	254	9.5
165 166 167 168	Dislocations. Other accidental injuries Burns and scalds. Burning by corrosive substances.	834 216	31.4 8.1
169	Sunstroke	22	.8
170 171 172	Freezing Electrical shock Accidental drowning	45 159	.1 1.6 6.0
173 174	Inaultion. Inhalation of noxious gases (not suicidal)	138 20	5.2
175	Other external violence.	102	3.8 5.0
176			
176	C.—Homicides.	1	

Chamification Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate Per 100,000.
	XIV. CAUSES ILL-DEFINED.		
177 178 179	Dropsy. Sudden death (not puerperal). Causes not specified or ill-defined.	106 4 198	4.0 .1 7.4
	XV. STILLBIRTHS.		
180	Stillbirths	2,149	81.1
	All causes	35,992	1,358.9

TABLE No. 2.

Deaths from all Causes, by Months, Ages, Color, Nationality and Condition, for the Year Ending December 31, 1906, International Classification.

		Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	0et	Nov.	Dec.
1	I. GENERAL DISEASES. EPIDEMIC												
-: %	Typhoid fever Exanthemacous typhus	8	8	9	×	8	8	22	8	351	3 2	2 <u>4</u>	8
ಬ್ ಈ ಗು	Recurrent fever. Intermittent and malarial fever. Variols or smallpox.	6	æ	က	9-1	90	•		71	ដីខ	త్జ	12	
තුරුනු පැමු	Measter Searlatina. Searlatina. Croup. Diphtheria.	32.6	20220	2848	26	47 E 8	~2 <u>2</u> 2	74.0	121-731		∞44 <i>6</i> 5	88 v 44 v	21 m
2:12	Influenza. Miliary fever Asiatic cholera	23	3	9	8	7	84	*	64	en :	∞ : :	=	12
ಣ•	Cholens mostras. Dysen tery.	4	9		9	9	ν.	∞ %	• 4	m g	− 8	31	01
5,67,6,6	Bubonie plague. Yellow fever. Laprore. Erystrolas. Other epidemic diseases.	=		12	13	9-	40	10		en :	₩-	60	
នដន	Purulent septicemis and infection. Glanders and farry	23	23	2	8	16	*	8	18	8	13	•	13
	Rabbes Actinomycosis, trichinosis, etc				-				69				:: " ::::::::::::::::::::::::::::::::::

ង្ខខ្ពុខ្ពង	Pellagra. Tubervioles of the larynx Tubervioles of the larynx Tubervioles of the lunga. Tubervioles of the mentages	488	. 45 81 81	1881	. 88 52 5	- స్ట్రజ్ఞ	276 11	28.3	31.1	253	283 115	305		
8		8 8	-	; -	? -	-		- -	3 8	. 8	. →	: :		
ಕ್ಷಣ್ಣಜ್ಞ	Cold abosess. White swelling Tuberculosis of other organs. General tuberculosis				0104	2003	64100	-024	%1 4 4∞	 •==	1-0	901F0	::00 :: ::	
ష షష్ట భ్ర	Scrotula. Syphilis. Syphilis. Soft chancre. Gonorrhea (5 years and over).	•	19		HO H	40		2	00 0		ω ==	œ :	41	
왕축그칙칙	Cancer and other tumors of the buccal cavity Cancer and other tumors of the stomach and liver Cancer and other tumors of the peritoneum, intestince and rectum. Cancer and other tumors of the female genital organs. Cancer and other tumors of the breast.	2225 1252 1252 1253 1253 1253 1253 1253	20020	- 4 955	∞ రెడ్టుల్ల ం	చే డి ంలిన	21 သီ သ သီ လ 	4422	9825	8 1132	4 4 722°	4 18 a 3 a	405 181 181 181 181	
4444 4	Cancer and other tumors of the akin. Cancer and other tumors of other organs. Other tumors. Acute articular rheumatism. Chronic rheumatism and gout.	28 87	₩80 m2	33.8	182°281	28 48 11 11 11	•8ze50	274 45 6	ထထိထထလ	272	6000000000000000000000000000000000000	2723 6	89 : 128	
♣ ಔಷ್ಟ	Surry Disbetes Exophthalmic goltre Addison's disease Leukemis.	200	-22-	-22000	8-00	4 2	38.	-2-22	800	21° -	7 0 6	8	10 10	
4888	Anemia, phlorosis. Other general diseases. Alcoholism, acute and chronic. Chronic lead, poseoning.	61-7	4100	00 PJ PP	82-21	a a		⊬ 4π0	~=·	822	O⇒ 4+00	272	-100	
တွင် ကို	~~ <u> </u>		-				: :::		·			-	**	
83.5.58 83.5.8	Encephalitis Simple meningitis Simple meningitis Epidemic erebro-applial meningitis Epidemic erebro-applial meningitis Other diseases of the spinal cord	52.58 12.58	25 27 27 27 27 27 27 27 27 27 27 27 27 27	2554 £	42801	97841	28821	83136	725 v a	8 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	4824 5	2222		

TABLE No. 2—Continued.

		da di	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	4	Nov.	ğ
Sep 2 6 4	Congestion and hemorrhage of the brain Softening of the brain Parkyris, cause unspecified Searchyris Other forms of insanity	824.884	8538	8687	48840	4.0800	20 m	103 7.7 21 21 9	106 108 138 138 138	1 0 0 0 0 m	= 22 8 20	0114°r	2 2 2 3 3 3 3 3
1000E	Epidepay. Ourvisions (not puerperal). Ourvisions of infants.	202	13	గ్లాజ్ఞ	2424	138	248-	8-89	1 8°	4 20	5454	- 13 - c	
Chores Other 1 Disease Disease	Chorrea. Other nervous diseases Diseases of the eye.	7 2	13:1	72 7	01	40 T	23	15	α :	112	₩	01 8	_
Ang Con	Percardita Percardita Organic diseases of the heart Angina percora Disease of the arteries, theroma, anountum, etc.	13 188 27 16	2962	212	178	4688	867 158 158	256 256 284 284 284 284 284 284 284 284 284 284	153	82 g	4~Sa8	- ១ន្តឹនន	41223
Emboli Disease Disease Hemor	Smbolsm and thrombosis Diseases of the veins (various, bemorrhoids, phiebitis) Diseases of the lymphatics, tymphangitis, etc. Secontraling* Tabler diseases of the circuistory system.	9 7			~4-v	00 ⊶ 4	99 9	10 cq 00	ro .ee	100 m	9	99 9	
	IV. DURAGES OF THE RESTRATORY STATES. Beases of the name I come. Beases of the laryn.	12	•	2	-64	-	-	-		•	60	ĸ	
259	Diseases of the thyroid body haute bronchitis The control of the	82	- % 5	28	នន	% 2	® 9	24	72	79	17	~ <u>8</u> 2	

ఇజ్ఞక్షణ	Broncho-paeumonia. Paeumonia. Pieurisy. Congestion and apoplexy of the lungs.	25 8 23 20 8 23	88°2.4	412 43 43	28° %	. <u>25</u> °%	25°2	55.58 5.50 5.50 5.50 5.50 5.50 5.50 5.50	57 5 13	జ్ డి చి	18°8	216 27 27	85 2 8
8288	Gangreno of the lungs. Asthins. Plunoasy emplyeems. Other diseases of the respiratory system (phthisis excepted).	17 71	~10	13 182	27 4	20 80	-0-0		9 410	4:40	en 6	91	AP 0
	V. DISEASES OF THE DIGESTIVE STREEM.							_					
85889	Diseases of the mouth and adnexa. Diseases of the pharynx. Diseases of the sophages. User of the stomach. Other diseases of the atomach (cancer excepted).		8-14-13	10 m 10 B	48±v∰		8-1 -8		44 ∞6	4 68	41- 48	44man	6 0: 10
<u> </u>	Diarrhoes and enteritis (under 5 years of age) Chronic diarrhoes. Diarrhoes and enteritis (5 years and over) Infesting paraeles. Hernia and intestinal obstructions	80502	823	28 8 16 16	828 8	\$-1-8	₹ ₹8 ₩	ត្ត១ន ន	2 6∞83 ≅	413-2	8 288	8°% &	8:12:3
8 2 2 2 2 3 2 3 3 3 3 3 3 3 3 3 3 3 3 3	Other diseases of the intestines. Acute yellow atrophy of the liver. Hydsked timons of the liver. Gurbose of the liver. Bullary calculi	o : ::::::::::::::::::::::::::::::::::	15.0	21 22 2	2 2 2 2 2	21 1 88 0	= 8°	o 5ª	21 21 6	22 28	211.2	0 -1 3 0	13
11.25. 11.75. 18.	Other diseases of the liver. Diseases of the spicen. Simple peritonitis (not puerperal). Other diseases of the digestive system. Appendicitis and abscess of the liliar foresa.	8 2 5	27 21 11	11 18	2 2 2	%−% <u>®</u>	8 8 2	81-61-61	8 212	27 18	84842	7-8-2	91 711
<u> </u>	S 0 9	25 P	16 127 5 11	129 2 2	120	884 81	3118	185	127	110	133	84	14 156 1 1 1
44444	Discusse of the urethra. Discusses of the prostate. Discusse of the male gential organs. Wastrika. Uterine hemorrhage (non-puerperal).			01 0101	e	oo	7		4	₩	mu .	• -	64 to

TABLE No. 2.

Deaths from all Causes, by Months, Ages, Color, Nationality and Condition, for the Year Ending December 31, : Ä **9** Nov. 88 200 ಕ 35 Sept Aug. S ∞∞ July. June. 1906, International Classification. May. Apr. Kar. . 9 828 Jan. Asistic cholers Cholers nostras Uyenettery Recurrent fever Intermittent and malarial fever. Other epidemic diseases. Variols or smallpox Meanles. Nearlatins. Aproey...... Diphtheria Typhoid fever
Exanthematous typhus I. GENERAL DISEASES. EPIDEMIC ellow fever.... Subonic plague. . . . Whooping cough. dno. 25555 5.57.89

Glanders and farry
Malgrant purtule and authrix
Actinomycosis, trichinosis, etc.

ន់ដង់ង់ន

Purulent septicemia and infection.

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ងុងដុងង	Pellagra. Tuberculosis of the larynx Tuberculosis of the lungs. Tuberculosis of the noninges Abdominal tuberculosis.	4888		380		332 28 15	276 111 21	281 10 17	31 13 13 13 14	253	283 15 27	30°2 12502	
8	Pott's disease Cold shaces:	67	-	-		-	67		7	7	₹		87
ន្លន់ន្			നനമ		Ø10.4	~ • • • • • • • • • • • • • • • • • • •	64 rb 00	-w54	Ø4∙∞		2-2	::	::61 6 0
జ జజ్ఞ జజ్ఞ	Scrotus. Syphils Syphils Gold chance Good over). Gonorrhes (3 years and over).	•	1 9 1	- L	-0 -	40	∞4	01	N 60		٠ <u>٠</u>	oo :	Ar :::
84444	Cancer and other tumors of the buccal cavity. Cancer and other tumors of the stomach and liver Cancer and other tumors of the performent, intestines and rectum. Cancer and other tumors of the female genital organs. Cancer and other tumors of the breast.		8080	- 4 055	∞ రెజ్ కల ————————————————————————————————————	0,8°083	<u> ఆఫీ</u> జబ్బెల	4 11 12 11 11 11 11 11 11 11 11 11 11 11	61 181 181 181 181 181 181 181 181 181 1	8 1113	4 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	400 00 x	405187 7
4444	Cancer and other tumors of the skin. Cancer and other tumors of other organs. Other tumors. Acute articular rheumatism. Chronic rheumatism and gout.	20 . 20 . 20 . 20 . 20 . 20 . 20 . 20 .	r02224	31 31 16 11	22222	467 481 178	@85.050	924428	တတ္တမ္ တစ	27 10 2	2000	27229 6	8 16 17 8
\$ 52.52.52 52.52.52 52.52.52 52 52 52 52 52 52 52 52 52 52 52 52 5	Scurry Disbetes Exophthalmic goltre Addison's disease Leukemis	23	127	<u>2</u> 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	8-00	4 0	∞ n	25.12.2	2000	'Slee -	42 6	284 1	100
4.885.8 86.886	Anemia, chlorosis. Other general diseases. Alcoholism, acute and chrouic. Chronic lead poisoning. Other chronic poisoning, occupational).	r-19 :-	981-	000100	81-01	5 3 6 0	900	P-410	r	9:02	0.400	= 22 :-	400
;	ี ≡		•	•	:	<u>:</u>		:	- , -		-	-	•
8.2.2.3.8	Encephalitie. Simple meningitis. Epidemic erebro-spinal meningitis. Epidemic erebro-spinal meningitis. Other diseases of the spinal cord.	282°21	9 ⁷ 2 ⁸ 211	23 45 13	4238	° 7.54 1.1	25822	&EE 84	8 3.5222	2220	4884 5	28227	

TABLE No. 2-Continued.

	,	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	96	Nov.	<u>Б</u>
23828	Congestion and hemorrhage of the brain Softening of the brain Partylate, cause unspedified General partyles Other forms of insanity.	84884	85800	80 80 80 80 80 80 80	40540	4.08	20 m	108 7. 12 12	50.082.0	500000	128°0	011 212 20 7	
8855	Eptiepry. Corrulators (not puerperal). Corrulations of infants.	202	13	20020	5424	18 18 6	225-	81-88	1 80	4 12 0	5255	-1 <u>2</u> 12	21-23-8
_ E	Chores. Other nervous diseases. Diseases of the sys.	12	151	-= +	2	102	12	15	a .	11	₩ =	10	
	III. DISEASES OF THE CIRCULATORY STRIBE.						_						
F. & & &	Pericarditis Acute endocarditis Organic disease of the heart Angina pectoris Diseases of the arteries, atheroma, aneurism, etc.	7 13 188 27 27 16	. 20 52 E E E	213 213 27	170	48883	86. 15. 15.	25 85 85 85 85 85 85 85 85 85 85 85 85 85	282	s 2 9 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	40828	- ១ឌ្គីនន	41548
83.83.83.83	Embolism and thrombosis. Diseases of the veins (various, hemorrhoids, phiebitis). Diseases of the lymphatidus, fymphangitis, etc. Hamorrhag. Other diseases of the ctroulstory system.	9	2112	P==#	1-14-10	∞ :⊣ 4	00 O	\$2.64 \$3.	ra . w	00 10 00	9	ଜାଜା ଜା	9 : :
	IV. DISEASM OF THE RESPIRATORY STREM.												
28883	Diseases of the meal forms. Diseases of the laryn. Allesses of the larynd body Allesses of the larynd body Carbon broachitis Caronic broachitis	1 7 36 21	4-45	2 \$ 2	2 28	- 42	1 80	- 28	44	4 45	8 17 17	සසම්ව	

8888	Broncho-paeumonis. Pneumonis. Pleurky Congestion and apoplexy of the lungs.	\$5° \$3	88°24	412 43 43	200 × 20	. 25 8 8 	25.2	35.50 25.00	25-52	88-8	4 8.8	216 216 27	\$60 10 \$10
8888	Gangrane of the lungs. Asthans. Pulmonary emphysems. Other diseases of the respiratory system (phthsis excepted).	12 7	N-10	28-2	12	€ ∞	-0-0	-2-1	9 - 16	4:-0	2 2	16	
	V. DISEABES OF THE DIGESTIVE STRUEM.												
<u> </u>	Discusses of the mouth and adness. Decases of the pharynx. Discusses of the sophagus. Ulcor of the stomach. Other diseases of the stomach (cancer excepted).		8-45	30.11.05	40~ro€	45.5	83.7 83.7		44 80	4 66	41- 48	44-01	ыг :¤ 3
૱ ૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢ	Diarrhoes and enteritis (under 5 years of age) (Shronic diarrhoes. Diarrhoes and enteritis (5 years and over) Intestinal parasites. Intestinal parasites.	8°9°7	8=8 2	29 8 16 14	828 8	81174	248 ≅	28 88 28 28	\$ _∞ ≈ ≈	1 =8-2	8: 488	8 22 8	8:12 :3 :
900 H H H H H H H H H H H H H H H H H H	Other diseases of the intestines. Acute yellow atrophy of the liver. Brydach tumors of the liver. Bullary calculi	ص <u>ب</u>	7 36	21.22.22.2	2	88	= 8°	27.0	22 23	¤₁ :88	211.0	o. 20	13
11.55 11.76 11.86 11.86	Other diseases of the liver. Diseases of the spicen. Simple pertionitie (not purepent). Other disease of the digestive system. Appendicitie and abscome of the like forese.	8 2 8	27 11	81 81 71	2 2 1	81 81 81	% & £	18	8 2-18	2-2	82825	2017	91 11
119	VI. DERRASES OF THE GRAITO-URINARY STSTEM. Acute nephritis.	ង	16		91	81	8	17	11	7	. 81	8	7,
8 <u>2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2</u>	Bright's disease. Calculi of the winary tract. Diseases of the bladder.	23 %	127	92 79	82-21	84 2	116	11 7	8 1 8	2 2	28 88	¥ 882 II	5
44444	Diseases of the urethra. Diseases of the proteste. Diseases of the male genital organs. Maritia. Uterine bemorrhage (non-puerperal).		e	N NN	•	oc :	7		4 -		- CO - CO - CO - CO - CO - CO - CO - CO	• -	64 kg

TABLE No. 2-Continued.

Jan. Feb. Mar. Apr. May. June. July.	24.00	Accidents of pregnancy 3 1 1 5 3 1 12 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Albuminuria and puerperal celampaia.	VIII.	Arthritis and other diseases of the joints. Amputation. Other diseases of the organs of locomotion. X. MAINDEANTON.	15 25 28 24 30 25 19
		21 :00 00 00	00 64	20 00 00		
		2 :	4 00	Ω ⊢⊢ 4		16
. Oct.	∞∞a	8	4	∞∞		26
Nov.	04 4	4 0		 ∞⋈⋈ ⊀	4	22
Dec.			- 	I : 8		
	Feb. Mar. Apr. May. June. July. Aug. Sept. Oct. Nov.	Jan. Feb. Mar. Apr. May. June. July. Aug. Sept. Oct. Nov.	Jan. Feb. Mar. Apr. May. June, July. Aug. Sept. Oct. Nov. 33 4 1 1 1 2 2 2 2 3 3 2 2 3 3 3 3 3 4 1 1 1 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Jan. Feb. Mar. Apr. May. June. July. Aug. Sept. Oct. Nov. June. July. Aug. Sept. Oct. Nov. June. July. Aug. Sept. Oct. July. Aug. Sept. July. Aug.	1940 1940	140 150

TABLE No. 2—Continued.

•	Jan.	Feb	Jan. Feb. Mar.	Apr.	May.	May. June. July.	July.	Aug.	Sept.	1 00	Now.	ğ .
XIV, CAURRS LIL-DEFINED. 177. Dropsy cast (not puerperal) 178. Sudden death (not puerperal) 179. Causes not specified or ill-defined XV. STILLERENES	6 27	85	21 🖚	13	∞ .os	12	7 110	∞ ⊠	· 8	II 28	o.⊣ @	F :00
180. Stillbirths.	197	160	198	181	181	181	187	21	173	174	173	153
Grand total.	3,110		2,924 3,321	3,142 2,766	2,766	2,420	2,845	3,136	8,146	3, 101	3,049	3,024

TABLE No. 2—Continued.

. Deaths from all Causes by Months, Ages, Color, Nationality and Condition, for the Year Ending December 31, 1906. International Classification.

General Decrees Expenses Companies C	3 3 3 4 2 2 3 3 4 3 4 4 4 4 4 4 4 4 4 4	86 22 18 16 5 3 3 7		13 6 11 24 15 18 18 18 18 18 18 18 18 18 18 18 18 18		16 12 16
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Errorance. 12 13 14 15 15 15 17 17 17 17 17 17 17 17 17 17 17 17 17						10
German Disease, Erdendo. Ty shold fover. Eartheanton typins. Recurrent fever. Internation annuarial fever. Measles. Sartistina. Measles. Cholera or smallpox. Diphtheria. Diphtheria. Dynosite cholera. Cholera nostra. Dysestery. Egypoxy. Purulent septicemia and infection. Challes and favy. Purulent septicemia and infection. Glanders and favy. Ralignant pustule and authrax.	0	21 234	112 17 17	4		
		GENERAL DISEASES. EFIDENCO. 1'y bold fever. Exanthematous typhus Recurrent fever. Internitient and malarial fever. Various or smallpox.	4		Bubonic plague Yallow fever Leprocy Erystpela- Other epidemic diseases	Purulent septicemia and infection. Glanders and farry. Mallgreant pustule and anthrax. Rabbes.

TABLE No. 2-Continued.

1835 181	.4		:61		8 %-		8-4
8 3 %	:2,21	9 9 9 9	eo : : :		22 22	~*************************************	- R : "
8 3 3	151 10		-	æ 33	22 22	7 7 10 10	쯢여
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B.—Accidents. Tractures.	Other accidental injuries. Burns and scalds. Burning by corrosive substances.	Sunstroke 1 Ebering about Accidental drowning 6	Inaultion Inhalation of noxious gases (not suicidal). Other soute poisonings Other external Violence.	C.—Homicides. Homicide Mob violence XIV. Causes Ill.—Defined.	Dropsy Sudden death (not puerperal) Causes not specified or ill-defined. XV. STILIBRATES.	Stillbirths. 2, 149 Grand total 8,004

TABLE No. 2—Continued.

Deaths from all Causes by Months, Ages, Color, Nationality and Condition, for the Year Ending December 31, 1906. International Classification.

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	II. Diseases of the Nervous System and Organs of Sense.	Encephalitis. Simple meningitis. A Epidemic erebov-spinal meningitis. Progressive locomotor ataxis. Other diseases of the spinal cord.	Congestion and hemorrhage of the brain Softening of the brain. Paralysis, cause unspedified. General paralysis. Other forms of insanity.	Epilepsy. Convulsions (not puerperal). Convulsions of infants. Tetanus.	Chorea. Other n Diseases Diseases	III. Diskases of the Checulators Street. Pericarditis Acute endocarditis Organic diseases of the heart. Diseases of the arteries, stheroms, anountem, etc.	Embolism and thrombosis Diseases of the veins (variees, hemorrhoids, phisbitis) Diseases of the lymphatics, lymphangits, etc. Hemorrhage. Other diseases of the circulatory system.
.		82288	2832 28	8 8777	64.66	F;&&;8;2	නුකුකුකුකු

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		84.	∞ ∞	48	82 21 0	4 0.00	7 88 8	280-0
	23.0 187	2, 538 337 330 330	98°08	619°°°	1,765 1115 312 4 286	136 4 252 71	245 9 247 4 171	209 1,499 53 7
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	23	8538	64 5	.	82 2	= 80	21 7 3	202
IV. DISEASES OF THE RESPIRATORY STSTEM.	83. Diseases of the nasal fourse. 88. Diseases of the larynx. 89. Disease of the thyrold body. 80. Acute bronchitts. 91. Chronic bronchitts.	92. Broncho-pneumonia. 93. Preumonia. P. Pleurity. 95. Congresion and apoptexy of the lungs.	99. Gangrene of the lungs. 97. Asthma. 98. Pulmonary emphyseurs. 99. Other disease of the respiratory system (pithisis axcepted). V. Phessass on rest. Directors Systems.	100. Discusse of the mouth and adnera. 102. Discuss of the pharynx	105. Diarriboea and enteritis (under 5 years of age) 105a. Chronic diarriboea. 105. Diarriboea and enteritis (5 years and over) 107. Intestinal parasites. 108. Hernia and intestinal obstructions	09. Other diseases of the intestines 110. Acute yellow strophy of the liver. 112. Girchosis of the liver. 113. Girchosis of the liver. 114. Billary calcult.	114. Other diseases of the liver. 116. Diseases of the spleen. 118. Simple perfortils (on puerperal). 117. Other diseases of the digestive system. 118. Appendictis and abscess of the line feases.	VI. Diseases of the Genito-Uainar Streed. 119. Acute nephritis 120. Bright a disease. 121. Other diseases of the kidneys and their adnexa. 122. Calculi of the urinary tract. 123. Diseases of the biad fer.
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TABLE No. 2—Continued.

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Not Reported.						<u>-</u>		69	
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Single.		-	N909		C4 00	10 : :		No.	8 9°
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American.	42	41-	12888		38= 3	2-8		8 28 8	80-
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White.		41-	8282		8272	3-2		<u>=</u> ±88	₽a-
Unknown.		<u>-</u>				-			- : :
and over.							_	ю н	
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5 3 8 .	21							8- 4	-
885	21		es : ca					2 6	-
	Diseases of the urethra. Diseases of the prostate. Diseases of the male market community	Metrits. Uterine hemorrhage (non-puerparal).	Uterine tumor. Other disease of the uterus. Oysts and other ovarian tumors. Other diseases of the female genital organs. Non-pusrperal diseases of the breast.	VII. PUBRPERAL DISEASES.	Accidents of pregnancy Pengreats hemorrhage Obber socients of labor Poterperal septicemis	Albumburia and puerperal edampita. Plagmasta albe dolona, puerperal. Plagmasta accidents. Plagmasta accidents. Puerperal diseases of the breast.	VIII. DISEASES OF THE SKIN AND CELLULAR TESUES.	Gaugnene Carbunele. Acute aboose, phegmon Other diseases of the skin and admara.	Affections of the bones Affections of the bones Affection of the bones Affection of the joints
		44	24648		2 2 4 2	2335	Ħ	3659	7 교원함

	.		1,143 73 550		1,280			981 82 82 82 82 82 82 82 82 82 83 83 83 84 84 84 84 84 84 84 84 84 84 84 84 84	1	:8	25.	834 216 ::	82 =	25 25	និននិន
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	\$		1,143		r			Zuorg	▼	*	8	367	~6	83	122 9 76 81
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					165						7	60	-		
_					647				<u> </u>			-22-	-		-
					261					-	16	84	64	-	~ -
_								ro eo 4	69	-	-	24		64	0 46
X. MALFORMATIONS.	150. Malformations.	XI. DISEASES OF INPANCY.	151. Congenital debility, ictarus. 162. Other diseases of early infancy. 153. Lack of care.	XII. DESEASES OF OLD AGE.	154. Senile debility	XIII. EXTERNAL CAUSES.	A.—Suicider.	156. Suiside by poison 156. Asphyxia 156. Asphyxia 157. Haaging or strangulation 158. Diverning	(60. Cutting instruments. (61. Cutting instruments. (62. Cumbing from high places.	Other Suicides	124	100. Uniocations. On Other sociedatal injuries. 167. Burns and scaled. 168. Burning by corrosive substances.	69. Sunstroke. 70. Freesing	171. Electrical shock. 172. Accidental drowning.	173. Inanition 174. Inhalation of noxious gases (not suicidal). 174. Inhalation of noxious gases (not suicidal). 175. Other section plennings. 176. Other section in violence.

TABLE No. 2-Continued.

TABLE No. 2A.

Recapitulation of Table No 2—Classified Deaths by Months, Ages, Color, Nationality and Conjugal Condition, Year 1906.

		Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug	Sept.	Oct.	Nov.	Dec.
HHH7.	General discusses.—Epidemic Discusse of the nervous system and organs of sense Discusse of the rectification system Discusses of the respiratory system Discusses of the digestive system	700 375 264 285 285 218	23.88 23.88 20.33 20.22 20.22	25.00 25.00	240 240 241 241 281	765 270 270 285 2865	244 244 260 260 260	222 222 126 559	\$58.82 808.02 15	812 318 219 709	\$25.25 \$3.25 \$4	2288 333 2888 271	760 346 510 238
Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z	Discusses of the genito-urinary system. Puerperal diseases. Discusses of the skin and cellular listues. Discusses of the Jacomotor system. Malformations.	52 52 52 53 53 53	¥24 82 ° 58	2888 2	₽°8°3	52 52 54 58	25 × - 3	85 88 88 88 88 88 88	128128	24 24 25 25 26 27 27 27 27 27 27 27 27 27 27 27 27 27	22112	201 17 17 21 21	8 94.88
XXXXX	Diseases of infancy Diseases of old age. Diseases of old age. Cause/Illi-defined.	148 171 192 193	នីខ្លីនី៩និ	171 120 153 163 193	758258 2	E 88 7 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	261 82 81 81 81	22 23 24 187	7882882	168 243 30 173	458847 447	223 213 250 172	149 113 222 9 153
ı	Total	3,110	2,924	3,321	3,142	2,765	2,429	2,845	3, 136	3,146	3, 101	3,049	3,024

TABLE No. 2—Continued.

Тота.		8 :		8,			2,149	35,992
Not Reported.		-		_ :	6			3
Widowed.		-		\$-	. 22	-	:	6,654
.behræM		25		₹"	8			12,719
.elgniß		R		81	103		2,149	16, 199
Not Reported.		•		-	13		:	437
Foreign.		8		* -	·9			3,438
Атменсви.		29		5	175		2,149	32,117
Colored.		9		7	6		49	1,428
.syldW		4		87	189	_	2,082	34,564
Unknown.		6		-				180
and over.								380
8 38		-		23	9		:	2,570
5 3 8		7	•	8-	13			2,280
353				~-	110		-	2,375
	C.—Homicides.	176a. Homicide. 176b. Mob Yiolence.	XIV. CAUSES ILL-DEPINED.	Dropsy Sudden death (not mierrem)	Causes not specified	XV. STILLBIRTES.	180. Stillbirths.	Grand total.
				7,27	2		8	ö

TABLE No. 2A.

Recapitulation of Table No 2—Classified Deaths by Months, Ages, Color, Nationality and Conjugal Condition, Year 1906.

asses.—Epidemic			Mar	Apr.	May.	June.	July.	Yng.	Sept.	Oet.	Nov.	Dec.
Deales of the digestive system	790 375 264 285 218	228828	256 250 250 250 250 250 250 250 250 250 250	245 241 241 241 241 241 241 241 241 241 241	250 270 250 250 250 250 250 250	617 314 244 160 267	687 222 126 559	95.53 20.53 120 191	812 318 219 138 700	874 250 250 250 497	233 233 271 278 278 271	780 2310 236 236 236 236
system in tissue em	25 25 25 25 25 25 25 25 25 25 25 25 25 2	7.2 4.8 8.0 8.0 8.0	888 8	528°4	52248	\$2 8 8 8 8 8	858883	222	4 425.08	22272	22,12,23	196 19 14 33
	251 122 197	នីខន្ទន	171 153 163 163 193	25. 25. 25. 25. 25. 25. 26.	52.58	85 281 28 84 281 281	136 107 187 187	219 219 229 170	822 822 822 822 822 822 822 822 822 822	#2222 #222 #222 #222 #22 #222 #222 #222 #222 #222 #222 #222 #222 #222 #222 #222 #222 #22 #222 #222 #222 #222 #222 #222 #222 #222 #222 #22	22 22 25 25 27	149 113 222 9 153
	3,110	2,924	3,321	3,142	2,766	2,429	2,845	3,136	3,146	3, 101	3,049	3,024
章 王克	Decrease of the genito-urinary system Perpenal diseases Diseases of the skin and cellular tissues Aniormations Diseases of infancy Diseases of old age. Seesse of old age. Austral Causes Australl Causes Australl Causes Australl Ladefined Total		176 15 15 168 103 103 110 3,110	170 170 15 15 15 18 18 18 18 103 110 197 197 199 199 190 190 190 190 190 190 190 190	179 174 186 26 43 28 15 18 20 15 25 23 148 155 171 171 20 120 197 169 193 3,110 2,924 3,321 3,	170 174 186 177 26 43 20 20 15 18 20 20 15 21 18 20 20 16 120 120 120 177 157 169 169 184 3,110 2,824 3,321 3,142 2,	179 174 186 177 170 15 43 28 177 170 15 18 20 20 15 15 25 23 24 3 4 16 103 120 120 108 95 171 157 131 21 20 16 23 3,110 2,924 3,321 3,142 2,766 2,	179 174 186 177 170 163 155 155 155 171 171 172 173	179	179	179 174 186 177 170 163 180 172 149 15	179 174 186 177 170 163 180 172 149 172 15 18 20 20 15 8 8 11 13 14 11 13 11 14

TABLE No. 2A-Continued.

836	7,100 7,100	2 :e= :	. 8≪±	2,261
.	512 213 213 213	# I	: : : : : : : : :	! -
8 3 3		: :		8 1,926
23 3 8.	2 22255	8 9 .	101	1,526
33 33	21. 150 150 150	128	7 7 7	1,521
\$ 88	510 177 138 130 130	12 20 1	110	1,349
333	154 E8 E111	190 82	130	1,158
833	F2 2882	884-	26.	1,293
838	947 76 97 88	8244		1242
23 3 25	£ 38252	28a-	17:	1 383
প্রহপ্ন	8 E288	7.88 to	\$ 8	1,517
23 S.	\$ 5888	Samu :	148	1,177
55 55	2 8828	51.48	106	648
₹ \$ £	88 88 E	8	28.	892
4	2 2 2 2 3 3		18	88 .
	8 4458	9 :		337
H i				
8	138 75 137 145	564	: 28	583
1 2	197 138 168 75 300 137 461 145	0 1 2 4	# 88 # 25 c	1,257 583
0 1 2	423 197 608 168 48 8 843 300 1,513 461	21 15 6 274 4 4 3 3 1 15		<u> </u>
0 1 2	197 168 300 164 164	21 15 6 274 4 4 3 3 1 15	™ 88	1,267

TABLE No. 2A—Continued.

	•			
Total.	9,44,4,4 93,936 4,802 1808 1808	2,119 319 170 284 284	1,766 2,280 2,368 2,149	35,992
Not Reported.	22338	œ :«	25°	8
Widowed.	1,046 1,046	\$°.∞&.	9288	6,654
Married.	4,211 1,571 1,561 1,865 1,191	1,20 297 12,20 12,	813 87	12,719
Single.	3,644 1,513 1,937 806 906	8248%	1,786 1,171 1,171 1,171 1,178	16, 199
Not Reported.	28728	200 € 1	821.25	183
Foreign.	5222	35 25 4	888	3,438
Атенсъп.	8,85,492 8,441 1,167	1, 28, 28, 28, 28, 28, 28, 28, 28, 28, 28	1,766 1,982 1,980 2,146	32,117
Colored.	28124	8 5-2-0-0	28222	1,428
White.	844444 84888 87888	2. 885335	2,250 2,250	27,564
Unknown.	38 223	2001	က်ဆို	82
90 and over.	***	211 15 10 31 6 2 1	35	98
838	88488	211 8	282	2,570
£ 3 8 .	2822380 212323	¥ 81	261	2,280
83%	544888 54888 54888	268	248 17 81	2,875
	General diseases — Epidemic Diseases of the nervous system and organs of sense. Diseases of the trivulatory system. Diseases of the respiratory system. Diseases of the digositve system.	Diseases of the genito-urinary system. Puerperal diseases. Diseases of the skin and cellular tissues. Malformations.	Diseases of infancy Diseases of old age: External causes: Causes ill-defined Skillbirtha	Total
·	- - - - - - - - - - - - - - - - - - -	ZHHXX		

TABLE No. 3.

Nov. Dec. Deaths in Indiana by Months, Counties, Ages, Sex, Color, Nationality and Conjugal Condition, 1906. ë O Sept. Aug. July. June. 708 ·809 810 223 May. 323 242 251 20 Apr. Mar. Feb. Jan. Total Male Female Total. Male. Female. Total Male. Female. SEX. Bartholomew : | | COUNTIES. Boone. Adams Carroll Brown

	Total. Make. Female.	222	2888						288	282	282	182
Clark	Total. Male. Female.	825	865	38 2	12 23	28 8 13 12 12 12	2258	883	용끄ଘ	ទ ុកន	2882	882
Clay.	Fotal. Male. Female.	2818	222					-	824	823	872	8230
Jin ton	Total. Male. Female.	**************************************	1837			222		8118	#24 #	122	818 138 138	36 17 19
Grawford	Total. Male Female.	5:0:0	85 80 	823 e	808	268			1 02	~9 -1	0 104	21 9
Daviess	Total Male Female	118	% 518	38 18 18	27.5				809	8228	8228 - -	27 13
Dearborn	Total Male Female	822	27 11 11	21.12 14.13	828		27 C	228	825	822	822	8899
Decatur	Total Male Female	228	5 888	29.22					872	173	22 90	85 co co
Dekalb	Total Male Female.	1,61	8e5	223					810	222	13	31 18 13
Delaware	Total	282	282	283					388	\$ 28	\$ 22	828
Duboks	Total. Male. Female.	12.0	<u></u>	848	5520	18 7 7 11 6			882	10.26	801	220
Elkhart	Total. Male. Female.	828	27. 01	282					388	282	888	222

TABLE No. 3—Continued.

Mar. Mar. Mar. Mar. Mar. Mar. Mar. Mar.	Apr. 134	7 11, 121 11, 12 11, 12 11, 13 11,	28 845 1012 0 17 18 19 19 19 19 19 19 19 19 19 19 19 19 19	June Jule 11 12 12 13 14 15 16 16 17 17 17 17 17 17 17 17 17 17 17 17 17	June. July. Aug. 56 6 6 12 12 12 12 12 12 12 12 12 12 12 12 12	June. July. Aug. Sept. 11	June. July. Aug. Sep. 311. 12. 12. 13. 14. 15. 15. 15. 15. 15. 15. 15. 15. 15. 15
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7511 581 561 501 452 458 402 880 401 551 550 880 1201 201 2011 2012 2010 2011 200 2011 Tax 200 2011 701 - 100 - 202 430 500 500 850 851 404 55 : 210 813 700 751 01-11 01-11 01-12 01-12 01-14 01-15 588 588 800 887 422 811 E87 004 871 758 871 819 Total

Female

Female

Female

Female

Female

Female

Female

Female

Female

Female

Female

Female

Female

Female Huntington Hancock. Howard. Jackson.

TABLE No. 3—Continued.

			-										i
COUNTIES.	Sax	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Set Set	Nov.	Dec.
Клох.	Total Male. Female.	2825	288	822	882	ន្តដន	222	388	284	222	\$87	23.23	228
Kosciusko	Total. Male. Female.	27 15	8=8	212	ដូងន	2252	14 7	ង១ខ	8255	252	813	8229	8==
Lagrange	Total Male. Female.	822	41 5	112	2 1.00	200	122	340	2.00	¥8:	2011	700	ដដូច
Lake.	Total Male. Female.	242	2882	528	8888	288	888	888	228	288	843	288	72
Laporte	Total Male. Female.	\$88	322	\$28	46 19	282	183	280	1885	222	383	នងន	822
Lawrence.	Total Malo. Female.	31 15 16	8118	821	823	852	825	182	788	\$88	25.50	323	822
Kadison.	Total Male. Female.	583	833	878	888	288	22 22 23	228	887	82%	844	282	888
Marton	Total Male. Female.	334 169 165	908	198	319 161 158	314 154 160	222	346 185 161	275 152 152	302 167 135	310 170 140	31 157 154	358 196 168
(fershell)	Total Male. Female.	13	822	222	181	12.0	15	40 4	123	822	8==	288	85:1

Martin	Total Male. Female.	903 9	2	27-9	7500	0°4	∞ ◀ ◀	2007	12.00	200	40 0	707	410
Kiami	Total Male Female	12.03	222	828	282	282	822	821	821	828	8229	202	822
Мовгое	Total Male. Female.	1978	823	451 0	48 1	25 9	1128	282	#2I	222	%2 2	88°	822
Montgomery	Total Male: Female.	8839	1853	828	ន្ទន	121	12 9	843	180	184	223	48 2	822
Могдал	Total Male: Female:	25 9 9	ងខដ	889	210	8 178	7.0	08.0 08.0	222	222	827	4 43	322
New ton.	Total Male. Female.	13 6 7	∞ 4 4	00 N C	00 41 41	@ to to	214	₩	228	œ₽4.	44	F-410	
Noble	Total Male. Female.	33 16 17	224	107	2219	12 6 13	827	7200	202	222	16	250	~~ <u>~</u>
Оћю.	Total Male. Female.	10 to to	100001	ro es es	80 rD 83	79 PF	4-10	œr0.4	ರಾಣಾ	884	8	5000	240
Оталде	Total Male. Female.	822	77 01	21 8 13 8	‰ ∓	202	400	850	8:12	220	927	844	223
Owen	Total Male. Female.	17 6 11	71 8 8	122	11 9 2	000	100001	156	91 11 5	540	≋ 2∞	825	<u> </u>
Parke	Total. Male. Female.	812	228	822	823	gog	ಷ್ಹನ	2∞4	845	222	222	822	8
Реггу.	Total Male. Female.	996	13,78	80°	821	16 9	221	822	810	252	% o G	800	872

TABLE No. 3—Continued.

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No. No. 125 25 25 25 25 25 25 25 25 25 25 25 25 2
000 000

Shelby	Total Male. Female.					223	888	882	833	828	818	825
Spenoer	Total Male. Female.	840	17.18	23 15 8 112 112	822	823.0	827	282	40 0	8 ∞∞	NZ5	422
Starke	Total Male. Female.					P-1008	⊕ ••	~~	200	13	240	Ö ∞ 4
Steuben	Total Malo. Female.					5 KJ 0	13	202	7180	822	2 22	22°
St. Joseph	Total. Male. Female.	_			-• ·	883	548	823	282	823	234	273
Sullivan	Total. Male. Female.					882	8g°	48 3	823	228	728	182
Switserland	Total. Male. Female.					13	700	222	00 60 10	= %	8118	700
Трресвое	Total. Male. Female.				· 	322	483	388	482	222	222	222
Tipton	Total Male Female					780	21123	8 800	222	827	822	822
Un'on.	Total Male. Female.	<u></u> :	_			8	1000	***	Ö4.0	10 4 H	900	10 10 (1)
Vanderburgh.	Total. Male. Female.	103 52 51		51 93		8228	117 67 50	325	27.28	844	115 52 63	822
Vermillion	Total Malo. Female.	222	20 14 16 1			000	% 0.51	835	8=0	201	8117	8520

TABLE No. 3-Continued.

COUNTIES.	Sex	ig.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept) (t	Nov.	Š
	Total	167	884	116	98	78	8:	85	. 65	711	95	25	100
	Female.		a∓ 81	8 28	88 %	315	18 %	## R	15 E	88 81	8 3 8	:d &:	5 3 83
	Male. Female. Total		== 4'	ES	18 0		21 °	22 4	721 22	88 2		48 %	## Z ∞:
	Male. Fernale. Total	- w & =	88 ZZ	22 22	4.v &8		44 8,	මංග නිදු	-	## ##	86 25	. 85	28 85 20 20 20 20 20 20 20 20 20 20 20 20 20
Washington	Male. Female. Total. Male.	22 82:	10 E E E	-	82 205	25 845	-21 48	21- 51 e i	31 8°°	26 11 11 11	Zr	28 82°	77 go;
	r emale. Total Malo. Female.	3 888	* 522	. 288	288	2 283	. 283	6 2 6 1 6 1	2 282	2 23 28 2 23 28	388	. 482	822 *
	Total Male. Female.	21 6 15	8500	118	100	822	នដដ	858	25 E E E	17 8 9	223	800	18
	Total Male. Female.	0044	80°	250	200	88 80	67.0	4.00	200	18	800	<u>ფ</u> 00	212

Whitey	Total. Male. Female.	21 4	41	968	11,	1133	8 2∞∞	801 .	501	833	222	 	చ్యం
Total males. Total females		1,613	1,477	1,741	1,721	1,433	1,307	1,565	1,705	1,637	1,641	1,573	1,596
Grand total.		3,110	2,924	3,321	3,142	2 766	2,429	2,845	3,136	3,146	3, 101	3,049	3,024
	-		-	-			Ш	-					

33-Bd. of Health.

TABLE No. 3—Continued.

\$35 Deaths in Indiana by Months, Counties, Ages, Sex, Color, Nationality and Conjugal Condition, 1906. 888 33 38 23 23 \$ 38 383 833 828 영라路 ឧងដ 경약문 김육정 **≈** 3⊝ : 8 282 0 Total. Male. Female. Total. Male. Female. Total Male. Female Total Male. Female SEX. Adams Carroll Bartholomew..... COUNTIES. 11

Characteristics To Table To The Free Teachers To The Teachers	rk.	Clay.	Clinton	Drawford To	Daviess To Ma	To Ma Ma Fe	aturTo	Dekalb	Aware To Ma	hois. To Ma	hartRo
Total Male. Female.	Total. Male. Female.	Total. Male. Female.	Total. Male. Female,	Total. Male. Female.	Total. Male. Female.	otalasle	Total Male. Female.	otalale	otal	Made. Female	Total Male. Female.
233						188					
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	20-4										
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7202	% €8		292	See	No.5	505	≅ ∞5	7100	828	540	822
252	సౌకర	7°=	345	6 44	5×2	=∞∞	@ 10	00 co	8=5	6 600	288
8=0	₹ 0∞	81,11	7.2	887	200	11 00 co		r-4w	222	1129	825
asi.	₹ ∞∞	21-0	274	* *	240	0.00	= ×	640	8118	198	702
222	200	222	34 5	∞ -«	85.00	800	64 0	104 14	220	6 68	12 21
272	900	87 ° 9	25 x	400	\$80	71-1	27 2	100	827	00 K3 00	223
848	8118	802	202	2000	5.5	400	204	582	848	7887	285
888	120	%5°	941-	M	27.2	200	111	4.0	133	6000	\$25
383	825	812	455	P440	842	57.5	902	11 00 E	841	85.58	ននន
822	72 13	82.	. 25 c	200	522	222	8==	8°4	828	71.°	282

TABLE No. 3—Continued.

					 -	-	-	-	-	-	-	-	-	-	-		-	1	j
COUNTIES.	88 EX.	•		a	69	•	≈ 8Ğ	S 8 2	338	8 8 8	ಚಕ್ಷ	888	% 33	3 3 3	2 2 5. 	83%	338	838	೫೩೪
Fayette.	Total Male Female	80=	∞ ≪~	10000			4~0		See	80 64 44	904	500	4-0	P1001	-d-00	₽04	©10 ™	5 000	200
Floyd	Total Male: Female:	833	3e4	∞ 44	24 ≒	00 C	200	910	≅ 4∞	చ్చాల	7.00	22=	20 4	20 2	300	82m	822	70°	X 52
Fountain	Total. Male. Female.	228	040	8-4	ca ca		644	4-10	200	11 es	504	10 00 01	~=0	22.0	000	844	840	2~2	9119
Franklin.	Total Male. Female.	2822		~~~	0100	99	466	466	648	272	9	100001	∞ ∞4	040	P04	<u> </u>	© 17 4	200	0 40
Fulton.	Total. Male. Female.	828	©					4-10	~≈	246	540	~ 61 to	10 m cu	~ 4∞	•	4 ∞ 0	212	400	≒ -4
Gíbeon	Total Male. Female.	និនន	850	200	100400	6000	700	~4 ®	Sano Sano	202	200	1200	ង==	222	200	299	4 €∞	229	25-
Grant	Total. Male. Female.	385	881	48	27-2	540	4~~	200	報当	222	223	222	828	318	2=2	884	282	283	523
Grene	Total Male. Female.	2222	781 80	87-9	044	10000	See	000 C	2	2 22	4~~	841	212	∓∞ •	22.8	550	820	929	222
Hamilton.	Total Male Female.	888	888	444		∞ − e	F40	00 PO NO	480	504	700	00 60 rO	55 70 80 50 70 80	0044	224	P047	87.9	500	202

Hancock	Total. Male. Female.	2228	1000 1000	F-4100			•••••• 	12	13	100	044	_	780					\$::\$
Harrison	Total. Male. Female.	328	147	100100		844	04 0	00 to 01	300	200	00 to 00		P-0140	4∞~				222
Hendricks	Total Male. Female.	282	0.4×0		400	4444		= a	500	941-	.œeaœ.		800 64					200
Henry.	Total Male. Female.	283	722	:	:	044		400	చేసాయ	200	1000		500					25 æ 23
Howard	Total. Male. Female.	2223	200		:		2000	¥ 000	రెంటె	484	1200		500					%≈4
Huntington	Total. Male. Female.		4		:	:_		444	ā~.	202	9~0		540					172
Jackson	Total. Male. Female.	ನಬಹ	800	► ∞4	2000	800		₹∞ •	5 4.0	37~8	6 000	400	2 0.4	040	802	22023	291	8211
Jasper	Total. Male. Female.	88°	: :		:_		~~	- :-	6000		1010		40-		:			04r0
Jay	Total Male. Female.	2,2,8	2 ∞4			8-8		#2°	748	3 7 9	Ø4€		24.0 :					220
Jeffermon	Total. Male. Female.	628	200		10 60 60			540	బ్ఞా	22°	900		040					222
Jennings.	Total Male Female	38 119	27.8	6000	8	- i-	∞ α	540	604	300	4 4		800	r400				30 m
Johnson	Total Male Female	248	∞ − €1		∞ ~ ≈			0000	2007	722	= ~ ~		Siros Siros					5228

232 8218 5110 5110 8211 83 5210 5210 41. L 888 33 8 8 23 233 **\$38** 含 3 친 铭강축 智识器 4mm 2mm 2mm 2mm 2mm 2mm 2mm 2mm 청육路 엄망없 850 1.00 840 8501 800 8511 355 300 당않은 5142 042 444 054 004 041 500 822 535 284 1147 2100 0100 5E3 ი \$5 200 200 1 1 000 001 041 748 707 ::: 4000 400 Ino 404 %28 0 6 SEX. Male.
Female.
Total.
Male.
Female.
COUNTIES Kosciusko. Lagrange. LAWrence Laporte.

TABLE No. 3—Continued.

Martin.	Total Malo. Female.	882	= 00 m	юн 4 :	00	<u> </u>		m m	• •	:	<u>:</u>					⊕ 10.4	34°
Mami	Total. Male. Female.	828	340	884			8-8	ã∞∓	247							820	822
Monroe.	Total Male: Female.	848	978	878			400	Zee €	2720		<u>-∞4</u>	222				2299	18 12 13
Montgomery	Total Male Female	884	207	87			20 4 4	77 01	2120							825	116 116
Morgan	Total Male. Female.	288	2000	64 64			644	80°C	11.0							200	8,82
Newton	Total Male. Female.	8118	~~~	∞ −∞			87	m .m	: 		:_::					10 00 to	1004
Noble	Total Male. Female.	232	∾ es es	CN CN		81 81	~~~	► ∞4	r-104							222	8°21
Othio	Total Male. Female.	64 €	8181			:	8	<u>:</u>	8181		<u> </u>			<u> : </u>	:	∞ 01 →	**************************************
Orange	Total Male. Femsle.	282	20 CO	87			6000	8 61 9	1999			•				C 69 -1	α io ε τ
Омеп.	Total Male. Femsle.	N20	:	8 = N			w 69 60	8	2000							= °°°	ထလက
Parke	Total Male. Female.	828	=======================================	10 61 to	153		ю - м	52.0	5 00	00-	780	500 800 4	191	204	11.00	80=	17 8 9
Perry	Total. Male. Female.	222	21,4∞	► ∞4	2		► ∞4	*~0	55 6							æ.v. ⊶	18 11

335 용감원 757 940 564 5189 968 1188 28 28 පු පැපි **₹** \$ € 충 8층 铭경축 83% 铭유 엄하였 끊망였 당하다 ರ ಕಟ 0 Total Male. Female. SEX. Total Male. Female... COUNTIES. Randolph. Pulaskı.

TABLE No. 3—Continued.

Shelby	Total Male Female	83.28	დ.4.ობ 	-	4.62-	4.0101	မကက	24.8		801	13					300	31
Spenoer	Total Male. Female.	G85	 	5 2 4		00 to 10	6161	13	∞ ≈ 4	54.6	 		200	കങ ങ —	90-	4 0 °C	79 4
Starke	Total. Male. Female	82 17 18		8181		87	≈ −≈	887	.: ••••	m :m					m m	540	64.44
Steuben	Total Male. Female.	4 51		8	: :	61		55.5	≻ 4∞ 	24~			 		221		ន្តដូ
St. Joseph	Total. Male. Female.	288 123	182	4.0°C	16 8 8 7	822	121	822	38 17	8228			5 43 2 27 3 16		\$87	282	288
Sulivan	Total Male Female	142 93 40	138			23∞+	°4	97 6	822	6 4 6				8117	317	წდ.4.	858
Switserland	Total Male Female	88.0	≻ 4∞	81 81			8		∞ 4 01	~~~	11 92	-17		 ⇔ro.4	တယ္က	17 8	6 127
Tippecanoe	Total. Male. Female.	113 62 51	မာကက	:	∞w : 4-1∞	640	000		23 15 83	133.8			1 3 12 8 5		21 2 2 2	282	ន្តន្តន
Tipton	Total Male. Female.	242	540		8		4-6	6 40	146	147	00 17 00 00 17 00				~ 202	·	œ 4 r∪
Union	Total. Male. Female.	ထကက	.:::	4.00-			884			2	8 8		4-6			∞61 -1	44 .
Vanderburgh	Total. Male Female.	265 1155 110	282	19 15 3 6 16 9	676	27 0	200	238	288	43 24 24		24.2	325		288	248	ä#8
Vermillion	Total. Male. Female.	538		64.61 		r-400	20441	 .	47.	∞ r≎ co	~~ 4	300	460		2000	₩	978

TABLE No. 3—Continued.

COUNTIES.	Ser.	•		64 ·	~	4	ro 35	55 55	25 to 52.	83%	x 58	85%	% 3 3 .	3 3 2	3 2 8.	3 5 ≎ 55	28 3 8	838	885
Vigo	Total Male Female	888	36 11 19	044	640	P 63 ± 6	882	857	25%	2822	283	222	282	382	ន្ទងន	12851	888	828	822
Wabash	Total Male Female	282	P-1081	~~~	649	es es	ತುಣಹ	⊕ 40/	722	r-10-4	**	10 M W	P=0	1041	722	r40	22 99	272	831
Warren	Total Male Female	823	8181		:	81	6161	8	6000	844	8	∞ +0	m m	88-		യനാ	#∞	22	P-104
Warrick	Total Total Female	843	2 20	∞ 4 4	:	100001	© 000	00 00 40	11.00	52.2	785	Фю.4	722	@ 4 6	540	r-40	200	480	45 0
Washington.	Total Male. Female.	ន្តដន	60 4 4	81			∞ ~	8181	34 10	246	52.65	346	00 NO	966	540	004	F-00-4	299	H40
Wayne	Total Male. Female.	828	See	⊕ 40	, wa-	200	17	10 01 00	802	% 22	291	202	222	288	825	827	4 28	428	388
Wells	Total Male. Female.	842	12 2	88 4	81		<u>.</u> Ф го го	89 8 0	P 69 40	200	P-01-10	900	6 84	480	64 0	See	17.4	= ×	55 9 4
White	Total Male. Fernale	\$88	100001	80-	,4w-	≈ −0	0.0 4	487	400	o∞	444	400	887	10 − 4	525	**	P-01-0	979	₹86~

13 6 7 6 7 8	864 1,076 1,198 672 850 1,063	1,526 1,926 2.261
940	228	1,521
957	623 535 662	58 1,34
54.6	32	1,298 1,158
© 64 4	28	1,242
200	3%	1,383
12.0	201 816	1,177 1,517
	28.25	1,177
400	88	3 5
:::	200	55 75
	167 170 134	337 285
8-0 :	2305	283
6 64	500	1,257
\$82	3,504 2,500	8,004 1,004
dey Total Male. Female.	Total makes	Grand total.

TABLE No. 3—Continued.

IstoT Deaths in Indiana by Months, Counties, Ages, Sex, Color, Nationality and Conjugal Condition, 1906. Not Reported. 222 284 Widowed. 825 828 828 88**8** 828 Married. 258 252 211 888 828 28 288 : Foreign. 582 American Colored. 2282 : : : and ver. 838 2823 83% Total. Male. Female Total Male. Female. Total. Male. Female. Total. Male. Female. Total. Male. Female... SEX. Carroll Benton Bartholomew..... Adams. COUNTIES. Boone. . . . Blackford.

Gass	Total Male. Female	922	834	000	m :m	222	70 44 to	\$ 22	638	ä≒∞	190 110 87	223	335	223	278 278
Clark	Total Male. Female.	219	8==			383 187 176	288	25. 19. 19. 19. 19. 19. 19. 19. 19. 19. 19	882		87 87 87	252	828	8161	458
Clay	Total Male. Female	821	222	822		2222	804	25. 16. 16. 16. 16.	32 3	400	161 287 24	288 288	224		214 214 181
Clinton	Total Male. Female	25.53			£ 44.64	¥256	m m	86 167 197	4-100	818	\$2.8 8	2382	884	:	387 170 197
Crawford	Total Male. Female.	0,00						282	884		25 25 25	282	833		322 222 222 222 222 222 223 223 223 223
Daviess	Total Maje. Female.	850	540 	222		371 176 196	87 	35.55 88 88	200		17.8%	5.48	322	228	25 198 198
Dearborn	Total Male. Female.	822	222	8228	8	143	6000	881 881 11	222	~≈	22122	822	223	80 H 69	310 164 146
Decatur	Total Male. Female.	2119	822	24.81			99	88 82 83 83 83 83 83 83 83 83 83 83 83 83 83	#ZZ	:	888	522	844		#8# #8#
Dekalb	Total Maje. Female	821	### ###	228		222		270 154 116	220		22 3	월24	888		222
Delaware	Total Male. Female.	2228	855 8 2	80%	400		822	818 200	222	404	818 125 126	1102	582	- :-	25.55 25.55
Dubols.	Total Male Female	000	200	202		128	44	201 201 201	332	0164	ន្ទន	2 43.	\$-2	es es	3 13
Ekhart	Total Maje. Female.	288	222	282	644	837 837 916	0100	228	288	- 0 =	Na Na Na Na Na Na Na Na Na Na Na Na Na N	25.25	528	**	336

4	Total.	<u> </u>	438 223 216	289 123 146	250 200 200 200 200 200 200 200 200 200	철용호	88 22 E	252	255 155 150 150 150 150 150 150 150 150 1	88 173 157
	Not Reported.	2500	400-		:			20-	€0	876
,	Widowed.	32%	382	334	382	\$11 8	4 88	585	523	583
•	.beitraM	888	127 88 50	234	288	844	388	287 168 119	322	55.5
1	Single.	282	197 113 84	112 50 53	23.48	288	78 81 78	883	25. 28. 28.	2382
j.	Not Reported.	8 8	10 to :			00	644	2000	&rò-1	81
	Foreign.	11/4	2822	ē E	822	∞ 44	27,	282	ងឌ៰	924
	American.	25.88 88	377 194 183	252 110 133	174 87 87	338	272 204 168	750 441 318	388	정도로
	Colored.	1-40	ខង្គង				822	428		940
		288	865 86 86 86 86	268 146 146	855	882	370 162 162	162 173 112	25.5 25.5 25.5 25.5 25.5 25.5 25.5 25.5	25. 25. 25.
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, . -	s. bo	10 m 4		040	84 84		40-		∞ −01	92.4
! _	8 38	825	% ≭8	822	824		- 16 9 7 6	242	24.	_ 878
	5 5 3 3 9	13	328	21∞ ∓	20°	22°	7286	<u> </u>	824	822
; ;	83%	13	822	811,7	≅ ∞∞	929	820	842	12 24	12 78
; ;	Sex.	Total Male Female	Total Male: Female:	Total Male. Female.	Total. Male. Female.	Total. Male. Female.	Total Male. Female.	Total. Male. Female.	Total Male Female	Total Male Female.
() ()	COUNTIES.	Fayette	Floyd.	Fountain	Franklin	Fulton	Gibeon	Grant	Greene	Hamilton

TABLE No. 3-Continued.

Hancock	Total Male Female	82:	55 Q 4	220	4 4		276 2 149 1 127 1	128			27.23	223	ន្តនន	10 4 H	£ 55 55
Harrison	Total Male Female	853	8880	822	20 4	- AHA					ឌីន2	834	288		85 181 181 181 181 181 181 181 181 181 1
Hendricks	Total Male Female	822	7.08	222	400	884	2388			884	384	224	2228	:	276 141 134
Honry	Total Male Femsle	822	187	523	∞ ⊣0	· · · · · · · · · · · · · · · · · · ·	<u>:</u>	725.	———— ∞ 4. 4.		348	228	883		336 163 173
Howard	Total. Male. Female.	222	21 16 5	8::8	24	48=				eo eo :	8 238	322	223	77	2115 204
Huntington	Total Male Female	823	8 2 2 8	883		- i-	<u>:</u>	1 317			នីឧទ	22.23.23	22 22 22 		85.59 65.59
Jackson	Total. Male. Female.	861	13 42	8=4	887-		305 214 181	788	នដដ	C4 C4	85°5	382	58 2	999	300 215 184
Jasper	Total Male Female	07 %	r-400	400	8 :	:	<u>: : :</u>	<u> </u>			822	288	###		28 28 53
Jay	Total Male Female	800	119	42 =	≈=a	****				: : :	282	¥23.8	282		345 178 167
Jefferson	Total Male Female	8118	822	228	400	~ - - - - -				664	178 107 89	822	888	6160	208 210 188
Jennings	Total Male Female	77 01	11 5	8°2	40-		288			887	843	23 2	852		200 102 103
Johnson	Total Male Female	86.0	27.0	823	~ ~ · · · · · · · · · · · · · · · · · ·						.112 53 58	882	282	844	22 132 134

.letoT

8888 868 25e 848 484 484 844 868 882

Not Reported. 225 578 585 248 548 548 585 588 :mjisno¶ 7-20 282 401 8882 8882 401 8882 TABLE No. 3—Continued. White. 3888 501 **78**88 838 838 400 232 SEX. COUNTIES Laporte.....

Martin	Total Male. Female	స్తల		 തയത	~ ·	~ :	35 82.22		_ :		£3 8	822	2233	: : :	882
Marni	Total Male Female	883		282	∞o1						21.88 28.89	₹ 88	883	m m	202 181
Мопгое	Total Male. Female	25 a	-	: :		- - - -		2 2 3 2 4 1 3			7228	888	ន្តន្តន	64 -	22 24 24 24
Montgomery	Total Male Female	13.138		1238	4-6						2222	158 158 158 158 158 158 158 158 158 158	288	00 to 00	25 25 15 15 15 15 15 15 15 15 15 15 15 15 15
Morgan	Total Male. Female	258 88		929			:		:		25.82	97 46	282	- :	988 138 138 138 138 138 138 138 138 138 1
Newton	Total. Male. Female.	40°		≻ ∞4			! !			:	328	282	# #	· []	233
Noble	Total Male. Fernale.	282	4∞∞	818		822	276 133 143	242		••••	524	5 88	223	mm :	276 183 148
Овью	Total. Male. Female.	œ₽. 4		80,40	<u>:</u> _		:	**;			870	851 5	308		222
Orange	Total. Male. Female.	<u> </u>		#2E	64 64		:				284	284	3 28	2	26 118 118
Ожев.	Total. Male. Female.	67.5			<u> </u>		_ : <u>: :</u>			_	ន្ទន	E88	202		358
Parte	Total Male Female	47.		222	_ :_:			**************************************			87.29	11.88	828	44	301 151 150
Рету.	Total. Male. Female.	12,51		20°		212			·		95.238	542	872		249 112 137

TABLE No. 3-Continued.

COUNTIES.	Sex.	535	55 38 56 23	858	90 and over.	Unknown.	. Мънсе.	Coloreda	.пвэнэшА	.mglsno4	Not Reported.	Single.	Married.	.bewoblW	Not Reported.	Total.
Pike.	Total Male Female	11.00	. 12 8 15	320		8	318 155 163		308 147 161	₽ 200	400	38.8	5222	\$48	87	319 155 164
Porter.	Total Male. Female	822	2229	880	4-10	22	841 88	:	101	282	888	822	888	222	919	247 149 88
Posey	Total Male. Female.	822	722	871	69 69		88 94 94 94	23 8 8	280 143 137	822	884 ←	788	564	252		311 163 148
Pulaski.	Total. Male. Female.	540		27~2			2288		<u> </u>	90~	mm :	238	***	822	44	25 28 28
Putnam	Total Male. Female.	7 16	728	822	81-1	99	847		25 138 102	@ ro m	00	828	883	288	400	146 106
Randolph	Total Male. Female.	記念末	897	822			25. 15. 15.	נאנא	320 168 152	P-1001		និខន	823	282	88	825 171 172
Ripley.	Total Male. Female.	17 0	853	25°	200	ν.Ψ~	2228	:	165 91 74	288	907	248	828	ន្តងន	44	22 24 28
Rush.	Total. Male. Female.	ŭ.es⊗	98	822	80 H 81		101	59-	225 1117 108	69 64	:	328	848	282	88	822
Scott.	Total Male. Female.	<u> </u>	10	666	69 69	- -	8558		566			នងន	\$22	2142		81 48

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16531	ರೆ ಎ ಬ	250	818	843		5 -5	288	25 ×	876	288	12
202	2011	156	6220	2588		22°		212			15
725	27000	400	422	282	822	225	382	822	12 14	828	7
Total Male Female	Total Male. Female.	Total Male. Femsle.	Total. Male. Female.	Total Male Female	Total. Male. Female.	Total Male Female	Total Male. Femsle.	Total. Male. Female.	Total Male. Female.	Total Male Female	Total
Shelby	Spencer	Starke	Steuben	St. Joseph.	Sullivan	Switzerland	Tippecanoe	Tipton	Union	Vanderburgh	Vermillion.

LatoT Reported. 30N Widowed. \$55 \$28 **458** 554 **83** 885 88**9** 555 285 587 824 558 258 258 **Agai**S Not Reported. Forelgn Colored. 85 85 54 55 EE 888 Unknown. 838 **%38** 83% Total. Male. Female. Total Male Female... Total Male Female. Total Male. Female. SEX. COUNTIES. Washington. Warrick.

TABLE No. 3—Continued.

224 113 111	19,009 16,983	35.992
	ğz	420
358	2,525 4,129	6,654
% 38 %	6,938 5,781	12,719
244	9.220 6.970	<u>S</u>
es e4 	38 13 13 13 13 13 13 13 13 13 13 13 13 13	437
2007	1,982 1,46	117 3,438 437 16,
865 865 865 865 865 865 865 865 865 865	16,715 15,402	32,117
	298	1,428
1123	18,247	34,564
	¥2	0 180
4-0	202 203	
13 8	27.28	280 2.570 36
822	1,217	2,280
40 6	1,290	2,375
Total Male. Female.		2,37
Whitley	Total males Total females	Grand total

TABLE No. 4.

Deaths in Indiana by Counties, for the Year 1906.

11	Smallpox	∞	1 :	:::::	:::::	:::::	. : : :
	Violence.	2,210	754	28203	22223	82022	2223
	Свяпови.	1,417	£.	55002	222°8	2222	2222
	Puerperal Septicerria.	35	2	6 64		10 d = 10	-88-
	Influensa.	ន្ត	\$			~~	8-8-
1 gg	Cerebro-epinal Memingitis.	181	251	25-40	4-305	00 00 00 00	-4
DRATES FROM INPORTANT CAUSES.	Diarrhoeal Discases .c value	1,823	577	28.522	25222	23°22	-2 555
Inport.	Paeumonia	3,302	1,066	83.82	28228	28128	8228
HOM	Whooping Cough.	157	\$	-9 - :		64	8
P	Measles.	23	=	:::::	:::::	: : : - :	-
DEA	Scarlet Fever.	101	23	-01		61	
	Cronb.	7	•	- : : :	11111	1 1 1 1 1	69
	Diphtheria.	8	33	~ 4	es ∞ ¥	410 64	akta
	Typhoid Fever	913	250	& 25 ct 40 &	2000 2	2072	4800
	Other forms of Tuberculosis.	8	167	6 52 : 4	& ~24	4001-4	~2I~
	Pulmonary Consumption.	3,796	1,041	88228	38228	22588	2482
IMPORTANT AGES.	65 Years and over.	9,846	3,357	82822	255 255 255 255 255 255 255 255 255 255	88228	8225
	15 to 19 inclusive.	1,177	8	ដីដីឃត់ហ	22228	77-81	∞8833
	10 to 14 inclusive.	649	218	52 25	80742	201210	4901
	5 to 9 inclusive.	750	88	57-ss	864-4	50ura	225
Inte	I to 4 inclusive.	2,462	743	4 2133	87878	82222	2887
	Under 1 year.	8,00,	2,527	22823	22882	¥8826	**
	Stillbirths.	2, 140	83	28.00 K	8085%	22122	2222
190	Annual Death Rate p 1,000 Population.	13.5	12.8	11.3 14.0 9.7 7.7 12.5	15.9 13.8 13.8 13.0	11.5 8.6 12.2 11.2 11.2	13.1
pa	Total Deaths Reports for the year 1906.	35,992	11,415	1,143 1,143 133 250	255 255 255	245 285 287 287	25,780
	Population, Estimate According to U. S. Census Burceu.	2,648,549	887,832	23,052 81,502 13,611 19,914 19,953	35, 902 26, 272 47, 392 17, 736 63, 973	88.53.88 5.53.58 5.53.58	3.2.8.3. 4.4.8.8. 4.4.8.8.8.
	STATE AND COUNTIES.	State of Indiana	Northern Counties	Adams Allen Benton Blackford. Carroll	Cass. Dekalb Elkhart. Fulton Grant	Howard Huntington Jasper. Jay Koeciusko	Lagrange Labore Mareball

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44-0	954 <u>4</u>	91.01	38	22-02	2000	60000	88222	60000
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1-38	2278	8828	1,640	18 233	86238	4883	នដឹន៩ន	28888
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7.80.5	⊐∞3%	8858	8	82°85	45522	22222	88823	@5@5g
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7235	0448	2222	55	28082	84421	22222	18382	8412°
13.0 11.6 12.5	9.9 10.7 14.3 16.5	12.9 12.9 12.9	13.0	12.1 12.1 12.0 12.8	13.5 13.5 13.5 13.5	33.200	10.3 17.7 14.5 13.2	12.5
								
27.0	1,082	\$£38 	15, 166	86511238 84511238	266 266 203 203 203	88238G	8. 20.23.83. 20.23.83.	22222
29,352 23,106 10,624	15, 153 11, 668 15, 515 65, 451	28.23. 20.22. 17.525 28.533	067,620	28.00 28.22 26.22	19,614 57,421 13,841 22,201 16,388	19.12.23 25.23.23 25.573.23 26.573.23	22, 063 22, 153 20, 933 21, 183	5,2,12,8,00 5,86,08,0 5,88,08,0 5,00 1,00 1,00 1,00 1,00 1,00 1,00 1,
Mismi. Newton. Noble. Porter.	Pulaski. Starke. Steuben St. Joseph.	Wabash Wells White Whitey	Central Counties. 1,0	Bartholomew Boone Brown Clay	Decatur Delaware Fayette. Fountain	Hannock. Hanock. Hendricks. Henry.	Madison 2 Marion Monroe Monroe Montgomery	Owen Parke Putham Randolph Rush

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ľ;		Селосет.	28824	48-2	818	8625Z	25205	82198
		Puerperal Septicemia.	01 01 00	-m : :	\$	~~~~~~		
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ľ	38.05	Cerebro-epinal Meningitia.	10 10 00 Cu	4 2 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	88		80000	∞ 4.0.0.0
	NT CAI	Diarribosal Discases under 5.	\$25 % 2	518 6 113	250	802-2	28478	72 2 20
	DRATHS FROM IMPORTANT CAUSES.	Preumonia.	8587	88 88 88	915	84288	%4283	87837
١,	ROM I	Whooping Cough.		10	8	ಗುಬಗು4ಚ	9 -8	
1	88	Messles.		ω · ω	_	: : : : : :	: : : : :	:::::
)RAT	Scarlet Fever.		- : :	31		ი 	
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ď		Diphtheria.			- 76	6 -0-4	∞∞~n≈	200 −010
ľ.		Typhoid Fever.	947-	58.2	808	2020	82118	
1		Other forms of Tuberculosis.	4400	4828	. 88 . 3	₹0.000	97158	7000
1		Pulmonary Consumption.	8884	= 7228	1,115	88827	12213	28285
		65 Years and over.	3383	222 31 318 318	2,393	75 22 23 23 23 24 25	2827288	88224
	si	15 to 19 inclusive.	229-	~4~8	800	52,52	22284	55 88 °
i, il	MPORTANT AGES.	10 to 14 inclusive.	@ 4 60	280°	17	20044	_ ⊕⊬∞∞∞	စာလည်တစ
li)RTA	5 to 9 inclusive.	4.00	12,847	212	2-8=6	240°°	യഹയവ്പ.
	I.	I to 4 inclusive.	722	B _∞ 2B	813	20 8 2 8	82234	85478
		Under 1 year.	855	8888	2, 198	28832	82242	2882
		Stillbirths.	2882	E& _e Z	288	25.82.18	22222	ä≅38∞
7	.190	Annual Death Rate I. 1,000 Population.	8.4.8.0 8.4.8	14.7 17.8 10.4 15.4	13.9	12.0 12.0 12.0 12.0	4.25 4.20 4.00 4.00 4.00 4.00 4.00 4.00 4.00	12.8 15.1 15.0
į	pe	Total Deaths Report for the year 1906.	8888	1,189 1,189 120 611	9,411	240 330 246 246	# 8 5 5 8 8 5 5 8 8	888824 4 99
	P	Population, Estimate According to U. S. Census Bureau.	26, 906 40, 091 19, 500 6, 748	16,091 66,771 11,537 39,507	673,097	32,465 31,389 22,194 20,389	30, 382 30, 171 22, 068 27, 631	22, 913 16, 217 28, 104 15, 006
		STATE AND COUNTIES.	Shelby Tippecanoe Tipton Union	Vermillion Vigo. Warren	Southern Counties.	Clark Crawford Daviess Dearborn Dubois.	Floyd. Gibson. Greene Harrison.	Jefferson Jennings Knox Lawrence Martin

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21,724 18,993 21,263 22,655	20,093 8,497 22,546 26,456	11,840 76,553 19,725
Ohio Orange Perry Pike Poecy	Ripley Scott. Spencer. Sullivan.	Switzerland Vanderburgh Warrick Washington

TABLE No. 5.

Death Rates by Counties for the Year 1906.

	Smallpox.		:				
	Violence	4.88	8.0	88888 7.88111	882388 8.0.8.1.5	83834 98678	78.5 216.1 115.1
	Сапсет.	53.5	80	2484 27.03 2.7.011	55.53.4 5.6.6.2.6	38788	88.22 0.4.6.6
	Puerperal Septicemia,	5.4	6.4	7.3 14.6 5.0	80 80 F	13.6 6.4 6.8	8000 8000
	.ensuense.	8.4	5.5	712	27.4.2.4 7.6.6.6.6	6.8	8-7-25 8-3-5-80
	Cerebro-epinal Meningitis.	18.1	17.3	21.6 19.6 7.3 10.0 30.0	128.83.10 1.28.83.00 1.20.00	22 28	55 00
A USES.	Diarrhosal Dis- cases Under 5.	8.8	66.1	986.3 36.3 96.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1	25 85 85 85 0.0 25 1.4.	7.22.28 7.25.0 4.1.0	1938.8 37.2 37.5 7.5
IMPORTANT CAUSES	Pneumonia	128.0	120.0	86.7 176.6 100.4 135.3	181.0 98.9 113.9 78.9 125.0	25.25 2.4.1.28 2.4.1.4.8	1172.4 172.4 92.5 97.5
PROM IM	Whooping Cough.	5.9	80	12.2	60 00 00 00 00 00 00 00 00 00 00 00 00 0	6.7	A
DEATES P	Messles.	80 ,	1.2				946
. ^	Scarlet Fever.	8.8	8.0	2.4	2.1	3.4	22.2
	Croup	a .	8.	. 1		,	80
	Diphtheria.	14.2	17.4	30.3 17.1 5.0 5.0	8.3 16.8 37.5	13.5 17.0 21.3 6.8	10.08 10.08 10.08 10.08
	Typhoid Fever.	34.4	8.0	82778 00000	14.05 88 75 7.25 8 75	38888 36.7.03	25.5 7.5 7.8 7.8
	Other Forms of Tuberculosis,	8.8	18.8	00 11 00 00 00 00 00 00 00	28.00 26.00 26.00 26.00 26.00 26.00	22.22.25 23.83.85 3.83.85 3.63.85	2222 25.00 2.5.00
	Pulmonary Consumption.	143.3	. 117.2	148.1 144.7 88.1 120.2	136.4 102.7 120.2 163.5	142.2 105.4 138.5 110.4	925 925 93 93 93 93 93 93 93 93 93 93 93 93 93
	Annual Death Rate pe 1,000 Population.	13.5	12.8	11.8 14.0 9.7 7.7	15.9 13.8 13.5 13.0	14.0 8.5 12.2 11.1	13.1 13.6 10.9
	Total Deaths Reported for the Year 1906.	35,992	11,415	1, 143 1, 143 154 250	2522 2522 2522 2522 2522 2522 2522 252	38588 3858	8578 2848
	Population Estimated According to U. S. Census Bureau.	2,648,549	887,832	23,052 81,502 13,611 19,914	35,902 28,272 47,302 17,736 63,973	20 20 20 20 20 20 20 20 20 20 20 20 20 2	5;2;8;3; 24,2;3;3;3;3;3;3;3;3;3;3;3;3;3;3;3;3;3;3;3
	STATE AND COUNTIES.	State of Indiana	Northern Counties.	Adams Allen. Benton Blackford Carroll	Cass Dekalb Elkhart Fulton Grant.	Howard Huntington Jasper Jay Koetusko	I Agrango Jako Zaporte Maraball

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84.28 8.07.3	58.3 51.5 129.8	8483 4646	88.7	85888 800040	82188 228 24.86 27.0 1.0	26.3 73.1 73.1 73.1 73.1 73.1	22.25 24.26 24.26 25 25 25 25 25 25 25 25 25 25 25 25 25	\$222 000120
\$228	83.7 68.7	22.7 24.7 51.9	57.5	254488 254488 254486	2%5% 2%5% 7.864.08	#825% *45%	32783	88528 861-98
<u> </u>		4. 80	5.6	4 61 W	10.1	6.0 6.0 7.11 7.11	80 00 10 4 10 10 10 10 10 10 10 10 10 10 10 10 10 1	8 8 4 6 7 7
17.0 88.4 5.5	6.4	640	8.6	21 : 22	8-8-2	15.9 4.8 4.8 8.8	24.4.02 8.4.3.0.8	1.88 G
8023 407.1	13.1	13.8 8.2 17.3 8.2 17.3	17.3	125210	2400	238883 7.8.4.4.3	85.55 2.0.17.7.	82220
52.08 56.09 1.06.00	22.7 77.7 92.6 91.6	25.58 8.5.58 8.5.5.5 5.58	63.9	28 11.7 15.6 15.6 15.6 15.6 15.6 15.6 15.6 15.6	88287 41400	84484 orioxo	88.64.62 8.6.64.62	88888 ********************************
119.2 98.2 112.1	112.1 51.4 90.2 126.8	92.0 112.0 7.08	120.7	160.7 75.9 123.3 81.0 126.1	163.1 94.0 158.9 126.1 91.5	76.5 178.4 178.4 92.9	90.4 180.2 203.1 113.5 118.0	98.7 157.4 121.0 90.0
7	60 00 10 10		8.8	4.60 00 00 0.1- 60 10	20 4.61 64 70 64	8. 8. 0.41 8. 8.	9.11 9.0 9.0	8.00 0.4 7.5.8.8.8
	4.5	&	1.0			3.1	410	6
0.6		19.4	3.0	16.0 8.3 3.5	30.5	24 4 08 8	13.5 13.5 17.4	44
5.0	α 73		œ.	2.7	5.0			4
8.00.4.8 0.4.8 0.1.0	6.5 17.1 6.4 29.0	888	11.5	21.0 22.7 21.0	20 8 13 5 18 3	6.4.8.4. 6.8.4. 8.8.8.4.	2222 2222 2323 2323 2323 2323 2323 232	13.1
47.6 36.0 4.1 10.1	13.1 25.7 21.3	888.6 88.83 88.83	33.1	38.1 38.1 38.1 38.1 5.1 5.1	23.5 21.3 13.5 83.5 83.5	2821 24.011 6.4.01.8	83232 882332	88778 47.00.1
8.0.5. 0.0.0.	19.7	13.9	87.8	######################################	28888 010 010 010 010	25222 41149	23.55 23.55 23.55 23.55 35.55	13.7 12.0 13.0 14.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0 15
96.7 67.7 96.7	85.9 1111.4 100.5 137.5	97.6 115.5 73.0	150.7	176.8 136.7 133.6 117.3	168.2 116.6 122.8 153.1	130.4 156.9 117.4 140.7 206.0	101.1 176.6 133.6 179.3	126.0 124.5 130.3 110.8 136.9
13.0 12.5 12.5	9.9 14.3 16.5	10.5 11.2 12.9	13.9	14.6 12.1 11.0 12.8	16.0 11.2 13.5 12.1	12.9 13.1 13.2	10.3 17.7 14.5 13.2	1221111
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28, 352 11, 106 23, 603 10, 624	15, 153 11, 668 15, 516 65, 451	88,679 12,823 12	1,087,620	22.25.28 22.25.28 22.25.28 22.25.28 23.26 23.	19,614 57,421 13,841 22,201 16,388	25, 252 26, 572 26, 572 26, 572 26, 572 26, 572	20 20 20 20 20 20 20 20 20 20 20 20 20 2	51.4.1.8.8 1.4.1.8.8 2.6.8.8.8.8.8.8.8.8.8.8.8.8.8.8.8.8.8.8.
Mismi Newton Noble Porter	Pulaski. Starke Scuben. St. Joseph.	Wabash Wells White. Whitley	Central Counties	Bartholomew Boone. Brown Clay	Decatur Delaware Fayette Fount in Franklin	Hamilton Hanoock Hendricks Hendricks Henory	Madison Marion Monroe Montgomery	Owen Parke, Putnam Randolph Rush

TABLE No. 5.

Death Rates by Counties for the Year 1906.

		•						
		Smallpox.	e.ż.					
		Violence.	83.4	2 6	58883 588811	88288 37.80.0	86884 2867	78.5 216.1 116.1 74.1
		Сапсет.	53.5	8.8	43.3 46.7 1.0 1.1 1.0 1.1	55.53.2 5.6.5.3 6.1.6	38.1% 3.05.5 3.05.5	3454
		Puerperal Septicemia.	5.4	6.4	7.3	80 10 1- 0 4 6 0	10.1 13.6 6.4 6.8	00000 0000
		Influenza.	8.4	5.5	71.	42424 76866	6.8 6.8 10.2	547.8 644.9
		Cerebro-epinal Meningitia.	18.1	17.3	21.6 7.3 7.3 30.0	25.33 10.9 10.9	22. 28.8	85.0 0.0
	AUSES.	Diarrhosal Dia- cases Under 5.	8.8	1.98	868320 86.730	388888 30514	73255 604:10	188.8 188.8 10.5
	DEATES PROM IMPORTANT CAUSES	Pneumonia.	128.0	120.0	176.6 176.6 186.1 135.3	181.0 98.9 113.9 78.9 125.0	2.22 2.22 2.4.08 1.4.88	117.7 172.4 92.5 97.5
	вои Іме	Whooping Cough.	5.9	80.	12.2 5.0	64 64 64	6.7	40
	EA.T788 P	Messies.	80.	1.2				946
	Ā	Scarlet Fever.	80.	3.0	2.4	2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3.4	5.64
		Croup.	œ.	•	1.2		; ; ; ; ;	φ
		Diphtheria.	14.2	17.4	30.3 17.1 5.0 5.0	8.3 16.8 37.5	13.5 17.0 21.3 6.8	25.07 20.08 20.08 20.08
		Typhoid Fever.	34.4	83.0	82128 00600	14.05.55 7.2.5.8.75 8.75 8.75	22.03.88 24.07.68	85.22 1.05.25 1.05.8
		Other Forms of Tuberculosis.	2.9	8.8	20.0 14.6 20.0	16.7 25.3 16.9 23.4	5.52 4.82 8.83 6.61	22.9 27.5 11.7
		Pulmonary Consumption.	143.3	. 117.2	25.25 1.25 1.25 1.25 1.25 1.25 1.25 1.25	136.4 102.7 120.2 163.5 117.2	24.25.25 2.4.25.25 2.4.25.24.25	200 108.6 81.0 81.0
	196	Annual Death Rate p. 1,000 Population.	13.5	12.8	11.8 14.0 7.7 12.5	15.9 113.8 13.0	14.0 11.5 8.6 11.1	13.1 17.6 13.6 10.9
	ps	Total Deaths Reporte for the Year 1906.	35,992	11,415	1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1	88 85 85 85 85 85 85 85 85 85 85 85 85 8	555 555 575 575 575 575 575 575 575 575	2578 2548
		Population Estimated According to U. S. Census Bureau.	2, 648, 549	887,832	23,062 81,502 13,611 19,914 19,953	35,902 26,272 47,392 17,736 63,973	885588 845888 845878	25,28 25,28 25,28 25,28 26,08 26,08
		STATE AND COUNTIES.	State of Indiana	Northern Counties.	Adams Allen Benton Blackford Carroll	Cass. Dekalb. Elikhart. Fulton. Grant.	Howard Huntington Jasper Jay Kosciunko	Lagrango Lake. Laporte Maraball

			-:				. G . : : :	
95.3 45.0 188.7 3.8	82.25	8483 6666	88.7	856888 80840	818878 84.801	722385 7.1.8.1.5.	22121 24:84 20:00 20 20 20 20 20 20 20 20 20 20 20 20 2	28888 2001 2011 2001
2223 2000	85.25 5.45 7.75	242.7 54.7.7 51.0	57.5	2,4128 2,7:188 2,7:187	2% 62% 7.86.4.0.86	28.25 24.75 26.00	\$2788 8.6.1.1.6	\$25.28 \$2.1.28 \$3.0.1.28
	6.5 8.0 8.0	& 4 4 &	5.6	4 68 7.2 7.3	1.7	5.0 5.0 4.6 11.7	8.00	26.5 4.6 9.7
17.0 8.4 30.5	13.1	9.7	86 8.	12.0 13.9	8-8-4	25.4.7.4 8.88	22.4.01.83 8.4.3.0.8	8.88 1.89 1.4
80.21 40.71	18.1	28.82 26.82 26.82	17.8	16.0 10.2 19.5 17.5	24.00 24.01	2582823 7.6.4.4.3	85.38 2.01.7.7.	23.05
51.1 90.0 63.5 56.0	32.7 77.1 38.6 91.6	28.48 8.7.86	83.9	25.25 25.55 35.55	88282 21400	84484 exerc	88.04.84.85 6.06.64.93	8888 40000
119.2 117.0 98.2 112.1	51.4 51.4 126.8	94.9 112.0 80.7	129.7	180.7 123.3 123.3 126.1	163.1 128.9 128.1 5.1 5.1	178.4 178.4 178.9 7.29	203.1 203.1 113.5 118.0	98.7 157.4 121.0 90.0
;	80.80		8.8	4.80 0.7 8.6	5.2 2.3 2.2	6.3 14.0	3.10 8.00 4.	8.00.4 4.00.4 8.88
	5.	£.	1.0			8	410 4100	
0		101	3.6	88.83 .50	30.5	72.44 O 60 80	1.0.00.4	4.4
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8.0.4.88	2.05 2.1.4.0	8.08	11.5	22.88.42 0.7.22 0.0	20.8 13.55 18.35	6.4 6.4 8.8 8.8	22.58 8.25.58 1.13.55	13.1
47.6 36.0 4.1 10.1	25.25 25.7 25.7 25.7 3	88.23 98.23 98.86	83.1	38.1 25.1 38.1 38.1 38.5	22.23 22.23 23.55 23.55 23.55 23.55	252 24.07.13	852352 602000	882718 4.7.0.8.1
90.0 16.9 5.0	10.7 6.4 20.9	13.9 19.5 14.7 13.4	27.9	#18 × %	88888 61-65-6	85888 4-1-140	23.56 23.56 23.56 23.56	13.1 13.7 13.0 48.6 5.6
140.9 63.0 67.7 96.7	85.9 1111.4 100.5 137.5	97.6 115.5 73.0 122.7	150.7	176.8 136.7 133.6 117.3 147.1	168.2 116.6 122.8 153.1 146.4	130.4 156.9 117.4 140.7 206.0	101.1 196.6 176.0 133.6 179.3	125.0 120.3 130.8 136.8 136.8
13.0 8.7 11.6 12.5	9.9 14.3 16.5	10.5 11.2 12.9 12.9	13.9	14.6 12.1 11.7 11.0 12.8	16.0 11.2 12.5 12.3	12.0 13.9 13.1 13.1	10.3 14.7 18.5 13.6	12.5111.3
276 276 276	252 252 253 253 253 253 253 253 253 253	8528 8	15, 166	*#####################################	203 203 203 203	28228	2,000 M M M M M M M M M M M M M M M M M M	155 250 250 250 250 250 250 250 250 250 2
29, 352 11, 106 23, 603 19, 624	15,153 11,668 15,516 65,451	28, 42, 22, 22, 22, 22, 22, 22, 22, 22, 22	1,087,620	2,8,0,8,8 8,25,55,8 8,25,55,8	19,614 13,421 13,841 16,380 16,380	15,12,28 15,	219,282 219,655 22,153 28,153 28,153 28,153	22,12,13,2 22,14,78 28,889 5,689 5,689
Miami Newton Noble. Porter	Pulsski Starke Steuben St. Joseph	Wabash Wels White White	Central Counties	Bartholomew Boone Brown Clay Clay	Decatur Delaware Fayette Fourtin Franklin	Hamilton Hancock Hendricks Henry Johnson,	Madison Marion Monroe Montgomery	Owen Parke. Putnam. Randolph. Rush.

		Violence.	8288	11888	2	22.42.28	5882	82282
1	. ; · 1	Свяюн.	1888 8 6 6 6 6	2488 8460	46.5	34448 46608	24.45.75 7.25.00 5.20 5.20	82 40 81 13 13 13 13 13 13 13 13 13 13 13 13 13
į	,	Puerperal Septicemia.	7.4 15.3	64 04	5.9	0 0 4 2 7 0	8884 6466	6 80 10 9
	i	Laftvensa.	17.4	12.6 12.6 12.6	12.0	14.8 12.7 18.5 2.5	18.6 18.6 18.6 18.0 18.0	22.8. 25.8. 26.2.8
İ		Cerebro-epinal Meningitis.	85008 80008	27.78 8.8.8.8	80.5	22.7 13.3 19.5 19.6	08000 863870	13.77 17.75 83.37 17.58
	A 700 MB.	Diarrbosal Dia- eases Under 5.	8824 6464	76.38 22.0 22.0	81.7	86.2 66.7 47.7 31.5 117.6	88.25 4.25 4.4 4.4	74.1 67.8 145.8 53.3
	DEATHS FROM IMPORTANT CAUSES.	Pneumonis.	111.4 99.7 92.3 103.7	173.7 130.0 1.00.0	135.9	110.8 103.8 86.0 141.1 107.8	188.6 185.6 185.6 180.9	24.0 1.89.3 1.80.3 1.81
TABLE No. 5-Continued.	mon In	Whooping Cough.	4.4	7.4	7.1	4.2.2.3. 4.2.0.0.8.	9 47	4.6047 60-180-1
	EATHS !	Meanles.		12.4	-:			
Con	Ω	Scarlet Fever.	6.64 7-4	7	4.6	3.0 7.4 27.0 4.9	œ .63.44 ∞ .65.70	4.6.00
2		Croup		1. 4. 2.5	1.3		8 8	 10
No.		Diphtheria.	5,52 4,63 4,68	18.6 22.4 7.5	14.3	4.4.6. 4.4.5.3.9.	28. 10. 10. 10. 10. 10. 10. 10. 10. 10. 10	18.4 18.4 13.1 13.3
BLE		Typhold Fever.	2222 2608	388 37.05 37.05 37.05 37.05	45.0	31884 55001	8438848 80481	88.8 117.8 8.8 4.7 14.6 8.8
TA		Other Forms of Tuberculosis.	20.14 8.0.09 8.0.09	2223 8404	0.83	28.6 28.6 36.0 14.7	28.17.4 28.17.4 28.0	24.2 8.0 8.4 8.4 8.4
		Pulmonary Consumption.	144.9 147.1 112.8 74.0	68.3 170.7 202.4 4.0	165.6	123.2 200.3 175.2 147.0	144.8 146.0 155.6 199.3 166.4	248.7 203.4 121.3 188.5 126.6
	ber.	Annual Death Rate I. 000 Population.	13.3 14.8 9.6	14.7 17.8 10.4 15.4	13.9	12.98.00	4.62.24 4.62.24	12.8
	þe	Total Deaths Report for the Year 1906.	88888 88888	1,189	9,411	23149 246 246 246	28328 28388	308 209 526 166
!!	P	Population Estimates According to U. S. Census Bureau.	26,906 40,091 19,500 6,748	16,091 66,771 11,537 39,507	673,097	22, 194 22, 194 20, 389 20, 389	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	22,913 16,217 28,104 15,006
		STATE AND COUNTIES.	Shelby Tippecanoe Tipton Unkon.	Vermillion. Vigo. Warren. Wayne.	Southern Counties	Clark Crawford Daviess Dearborn Dubois	Floyd. Gibeon Greene Harrison Jacknon	Jefferson. Jennings Knox Lawrence. Martin
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10.5	11.7	13.19
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21.1 16.9 4.2.3 4.4.3		8.55 8.6.88 8.6.4
242.3 68.7.7 72.55.6 8.6	19.9 82.3 110.8 113.3	25.08 25.08 1.08 8.08
127.0 100.9 89.5 65.8 123.5	119.4 176.5 124.1 181.4	143.5 152.8 175.4 157.1
5.6 16.9	9.9	1.3
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3222 3122 31222 31222 31222 31222 31222 31222 31222 31222 31222 31222 3122 3122 31222 31222 31222 31222 31222 31222 3122 3122 3122 3122 3122 3122 3122 3122 3122 3122 3122 3122 3122 3122 3122 3122 3122 3122 32 32 32 32 32 32 32 32 32 32 32 32 3	223 118 271 447	1,193 1,193 246
4,724 18,993 12,263 22,653 26,653	20,093 22,546 26,456	11,840 76,553 22,796 19,725
Ohio. Orange: Perry Pike. Poeey.	Rtpley Scott Spencer Sullivan.	Switterland Vanderburgh Warrick Washington

TABLE No. 6.

Annual Death Rates for Seven Years, 1900 to 1907, with Averages of Cities of 5,000 Population and Over, Compared With Rural and State Rates.

	Popula- tion.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average.
TATE	2,658,549	14.2.	13.8	12.8	12.2	13.5	13.7	13.5	14.
TITIES—									
Indianapolis. Evansville Fort Wayne Muncie. South Bend.	204, 622 62, 307 49, 003 25, 309 41, 728	20.3 15.2 13.1 19.9 16.1	16.9 14.5 14.8 16.0 15.0	16.2 11.2 14.1 16.7 14.6	18.1 14.7 14.8 18.1 19.2	17.4 14.9 14.0 17.8 15.9	16.0 14.4 13.9 16.0 17.1	16.4 15.1 16.8 14.8 16.8	17. 14. 14. 17. 16.
Terre Haute. Anderson Elkhart. Elwood Hammond.	23,954 16,712	16.1 16.5 16.1 17.4 10.5	19.1 17.5 13.2 15.1 14.8	20.6 16.7 12.5 14.0 18.1	18.3 14.6 14.3 14.7 19.1	23.1 15.5 15.4 13.4 15.4	21.0 12.1 13.6 11.6 15.2	22.5 13.3 14.0 8.4 17.9	20. 15. 15. 13. 13.
Huntington. Jeffersonville Kokomo. Lafayette Logansport	10,818 11,549 18,864	12.9 17.5 16.2 14.5 15.4	13.4 22.3 16.0 16.8 17.5	13.2 19.5 16.1 17.9 15.1	16.5 21.7 20.8 18.4 15.9	17.1 20.3 18.5 21.5 17.6	12.7 17.7 18.7 21.6 17.1	13.4 19.7 20.0 18.6 16.0	14. 19. 18. 18. 16.
Marion Michigan City New Albany. Peru Richmond.	22,082 16,478 20,628 11,162 18,874	16.9 10.7 17.4 12.6 17.4	15.8 14.7 18.0 13.0 16.6	15.5 14.5 17.4 13.4 18.3	17.5 18.8 16.6 12.1 14.0	16.6 14.7 18.1 13.3 15.8	14.0 14.1 18.1 11.2 14.0	13.6 14.8 16.1 13.8 16.1	15. 14. 18. 12. 16.
Vincennes. Alexandria Bedford. Bloomington. Brasil.	11,012 8,823 7,221 7,437 8,538	12.5 12.3 10.5 10.8 7.8	19.2 16.1 10.9 11.8 10.0	17.8 13.9 12.4 17.3 14.1	15.1 14.1 11.3 14.8 8.0	22.2 11.4 19.5 16.9 20.0	20.7 4.4 18.1 18.9 12.5	20.0 6.9 18.0 19.7 12.8	18. 11. 14. 15. 12.
Columbus. Connersville. Crawfordsville East Chicago. Frankfort.	7.500	18.4 12.7 17.1 4.0 17.3	16.3 16.0 16.4 6.5 15.5	15.8 13.2 17.4 10.1 14.1	15.8 13.9 13.9 9.3 17.0	18.5 17.6 20.5 12.4 15.1	14.8 14.8 20.0 14.5 20.0	17.1 15.8 20.3 18.5 18.7	16. 14. 18. 10. 16.
Goshen Greensburg. Hartford City Laporte. Linton.	8,521 5,609 7,362 7,136 9,767	14.0 15.8 8.8 13.1	10.6 20.8 12.2 15.4	11.8 17.6 12.0 13.7 8.6	11.1 16.9 11.1 17.3 9.7	12.5 18.5 13.0 18.2 12.5	14.0 16.2 12.0 17.5 11.8	18.1 21.2 8.8 20.7 11.7	13. 18. 11. 16. 10.
Madison. Mishawaka Mt. Vernon. Portland. Princeton.	6,436 5,303 5,507	19.4 11.4 19.0 12.8 9.8	16.3 10.5 21.6 13.2 11.0	18.0 13.8 22.4 16.7 10.9	18.1 17.0 16.0 12.1 9.6	17.7 19.2 17.9 13.6 15.3	15.0 24.3 18.4 14.1 17.2	18.4 21.4 17.9 16.7 13.9	17. 16. 19. 14. 12.
Seymour Shelbyville Valparaiso Wabash Washington Whiting	7,856 6,756 9,502 9,546	14.2 12.9 11.9 11.8 14.9	13.9 14.2 11.9 11.0 16.5	12.9 13.7 10.9 13.8 14.6	13.0 14.7 13.9 9.8 15.5	16.1 16.5 15.6 14.3 15.9 11.4	15.8 16.5 11.5 12.7 14.2 10.3	15.6 16.4 12.4 13.0 16.5 14.1	14. 15. 12. 12. 15.
Average	1	14.6	15.3	15.3	15.4	16.8	15.8	16.4	15.
OUNTRY	1,666,283	14.3	14.9	13.3	12.9	14.2	18.9	13.8	13

CHART SHOWIN

NORTHERN SANITARY

CENTRAL SANITARY

SOUTHERN SANITA

Total population

Total deaths.....

Death rate per 1,000.....

Consumption, rate per 100,000...

Typhoid, rate per 100,000...

Diphtheria, rate per 100,000.

Scarlet fever, rate per 100,000.

Diarrheal diseases, rate per 100,000...

TABLE A.

: Not Re-Mothers. Fathera Foreign. Mothers. Births by Months, Color and Nutionality of Parents, for the Year Ending December 31, 1906. NATIONALITY. Fathera. 835838 25228 95536 28888 22888 American. 55348 337 157 878 878 3555 38888 8 Fathera. ::::60 : : : :9 ::2:: Sel'd. Females :-8 :2 : Males. Color. Females 83522 White. \$2955 \$2955 82228 F8845 3222 Jano I SEX. 55883 828888 885333 52285 emales. 22228 22288 88833 87288 器袋組の記 2227 82828 32832 ន្តន្តន្ត្ **%124%** 24242 October. 26232 22222 24222 2522**2** 28228 September, 22222 20244 22222 25583 usn2mv 88822 · Alm 98 80288 **8**4233 #2222# 'aun 20288 **\$\$**258 88728 22822 .Val **46484 47844 84888** **** 22482 April. ******* ****** *** 88288 March. **ង**ដនីងន February. 82844 28228 **ន្ទន្ទន្ទន្ទ** 83844 44868 .Tianuas. llen. artholomew. COUNTIES.

		; <u>K</u> 	medieW	• : \$. <u>! _ i _ i</u>		" : : : : :
	!	Foreign.	Mothera.	2124	7 = 00	49 2	28 5 S	25.04.1
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ļ	NATIONALITE.	American.	Mothers.	55 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	887483	928967	48688 31	4. 1.24. 1.24. 1.25. 1.2
	_		Fathers	261 261 261 261 261 261 261	887727 887727	92222 973 973 973	48847851. 48847851.	3, 25, 25, 25, 25, 25, 25, 25, 25, 25, 25
		70	Females.	000-0-	co es	. 420 - Bro		9
		Col.q	Males.	=~~~			::::01:00	
ļ	Color.	White.	Females.	222222	222222	32.25.25.25.25.25.25.25.25.25.25.25.25.25	228 288 288 288 288 288 288 288 288 288	2,031 1982 1773 269
d.		¥	Males.	22222	227 227 227 356 311	2327233	22 1 0 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2,130 251 138 152 200 255
			Total.	848.2842 245.2842	283388	207 316 316 219 1,022	1, 196 1, 196 1, 196	4 24 25 25 25 25 25 25 25 25 25 25 25 25 25
TABLE A-Continued			Females.	22222	25,22,26,56	316 316 140 196 518	25 0 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2, 20 191 132 183 260 260
Cont			Males.	28423	25.25.25.25.25.25.25.25.25.25.25.25.25.2	202 178 178 160 160 160 160	634 20 20 20 20 20 20 20 20 20 20 20 20 20	2, 328 188 158 152 212 261
Ĭ			December.	និដនិងន	252242	22222	88358	882728
E A	 - - - -		November.	¥4782	882	332252	248842	\$2828 2
BL			October.	\$2855	844288	22823	282828	<u></u> 2
TA			September.	82228	22822	12822	224333	588322
- 1			August	\$5.828 8	28228	25822	2852	
ļ		. .	.vlul	3824	8338 52	######	3 48728	និខមមន
1		1906.	June	ខនដងន	824834	832288	82228	\$22524 \$
i	İ		May.	34388	832223	*E####	286328	<u> </u>
,	!		April.	22222	823323	2882258	223824	847884
1			March.	22488	65888 23	222228	285282	848284
İ	ı		February.	\$ 2888	2582	248888	2 8 288	3 882525
			.vannal	222222	382323	%8%4388	838288	¥=2252
	COUNTIES.			Gibson Grant Greene Hamilton Hancock.	Harrison. Hendricks. Henry. Howard. Huntington.	Jasper Jay Jefferson Jennings Johnson Knor	Kosciusko Lagrange Lake Laporte Lawrence Madison	Marton Marshall Martin Mami Monroe Monteomery

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22882	######################################	200 200 151	2 2.25.25.28	22222	192 171 865 171 192	217 88 197 100	200 200 200 200 200 200 200 200 200 200	23,013
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22522	2000	22.882.2	25.05.15 25.05.15 25.05.15 25.05.15 25.05.15 25.05.15 25.05	812 802 86 86 86 86	252 252 252 253 253 253 253 253 253 253	2222	223 47	21,831
123 75 25 25 25 25 25 25 25 25 25 25 25 25 25	126 178 213 118	228 74 311 151	######################################	58258	22552	217 200 200 200 200	8228	23,469
2227	22 22	4:1842	22222	32884	7°5228	ង-ដង	228	3,558
86558	28888	******	80225	25872	61 & 52 & 52	3222	£8≅ :	3,787
73448	ន្តន្តន្តដ	¥8\$\$¢	8=455	182314	82588	8118 1181	#22 E	4, 263 3
858 48	25832	88883	23373	257 8 8 8	82.27.28 88.27.28	8223	\$8 4 0	3, 491
8 221228	28222	85184	228×2	5 ₹8=8	% 62 21 112 23 9 %	7-88 88	7258 a	3,913
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e 55 55 55	ភ៦ដូខម		¥25853	465 465 8	82282	844	2492	3,590
828.02	28328	— 52 62 72 72 72 72 72 72 72 72 72 72 72 72 72	8222	5 5 273	22. 129. 129.	788±	នងនដ	3, 715
22822	*****	3022	23222	9821 823 823 83	133 133 131 131	2888	:52 2 7	4, 157
Morgan Newton Noble Obio Orange	Owen Parke Perry Pike Porter	Posey. Pulaski. Pukasm. Randolph. Ripley	Rush. Scott. Shelby. Spencer.	Steuben. St. Joseph. Sullivan. Switzerland. Tippecance.	Tipton. Union. Vanderburgh. Vermillion.	Wabash Warrek Warrick Washington	Wayne Wells White Whitley	Grand Total

35-Bd. of Health.

TABLE B.

Births, Number of Children Born to Each Mother, Grouped Ages of Parents, Still, Plurality and Illegitimate Births, Year Ending December 31, 1906.

	COUNTIES.	Adams. Alian Bartholomew Barton Backorl	Brown. Brown. Garroll. Cleark.	Clay. Clinton Clinton Daviese Dearborn	Decatur Dekalb Dels ware Dubots Elkhart
•	Total Birtha	1,287 527 241 383	361 328 431 431	252 252 253 253 253 253 253 253 253 253	377 1,188 1414 730
	.teria	958888	88233	127 128 178 108	23 23 23 23 23 23
	Second.	25.25 25 25.25 25 25 25 25 25 25 25 25 25 25 25 25 2	82.28	\$ 2288	48538
	.brird.	25 25 25 26 26 26 26 26 26 26 26 26 26 26 26 26	#8338	2C38	88588
Nome	Fourth.	32833	47884	4485 2	15 888
er of Ch	Fifth.	7±88±13	882238	22222	82284
ILDREN B	Sixth.	888==	27 27	84347	27 - 85 28 - 8
ORN TO E	Seventh.	82828	2922	785%	50838
NUMBER OF CHILDREN BORN TO EACH MOTHER.	Elghth.	82 80 - 25	20004	81 8 9 7	8218 15
HER.	Ninth.	222-0	40000	40254	2220
	Tenth.	≈50°44	000-01 4	200m14	8-1-1-8
	Eleventh.	40 -	010004H		69 0010-
	Twellth and over.	45048	-4-6		~~~
	Not re- ported.	172	121		121

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** ### ***	=888 =	-2228 -2228	8 ~ 51 æ 41	245 2 4	22222	11222	42-5®
12223	88285	88250	80828	18884	288828	28785	
2222 	83288	28882	84325	32222	28628	82887	22°28
88488	8223	448% 6	288 2	8 7288	887132	82 32 4	88788
22322 2	88 <u>5</u> 88	28c28	**************************************	**************************************	250228	#325%	\$8°2\$
88847	និឌីជីនន	5522 3	228228	జక్షి క్రాజ్ జ్ఞా	25 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	88832	\$5°∞84
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22 3.20 217 23.20 237 24.20	488 626 243 271	28238 28238	562 207 673 336 333	1,022 452 400 813	775 670 4,529 443	25.88.82 25.88.85 25.	25 88 82 82 25 88 82 82 82 25 82 82 82 82 82 82 82 82 82 82 82 82 82
Fayotte Floyd Fourlain Franklin Futton	Glibson Grant Grants Barelion Hancock	Harrison. Hendricks Henry Goward Huntington	Jackson Jasper Jasper Jefferson Jennings	Johnson Knox Kosculsko Lagenge	laporte Lawrence Lawrence Lawrence Markon Markon	Martin Mami Monroe Montgomery Mongan	Newton Voble Noble Pange Veen

TABLE B-Continued.

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	•				N	ER OF C	NUMBER OF CHILDREN BORN TO EACH MOTHER.	OR N TO	Елси Мот	THER.				
COUNTIES.	Total Birtha	First.	Second.	.biidT	Fourth.	Euch.	Sixth.	Seventh.	Eighth.	Vinth.	Tenth.	Eleventh.	Twelfth and over.	Not re- ported.
Parte Perry Pilte Porter Posesy	88.55.23.24 88.55.25.25.25	22528	¥8888	28242	88478	28822	871816	22222	9811	87899	40440	H-1804	21012	
Pulaski Putnam Randolph Ripky Rush	### ## ## ## ## ## ## ## ## ## ## ## ##	82115 193 184 184	22322	28883	82882	28888	85%20 0	22622	27.40r	1000044	10 cd f- 44		ପଜାନମଙ୍କ	: :00 :04
Scott Shelby Spencer Starke Starke	223 140 146 146	2885 2885	ន្តនេះរន	88888	28232	2222°	~82 <u>1</u> ~9	3 ₈ 144	000rn	4400	-040-	, mm	0000	: 14t :t
Sk. Joseph Sullivan Sullivan Tippeanoe Tippeanoe	1,718 433 145 346 346	2 8.1488	88 821 871 871	282828	£85 % 8	2222	82222	80027	3. a I	₩	8 ara	11 1	Ö	7 :102
Union Vanderburgh Vermillion Vigo.	1,422 1,347 1,396	% & & & & & & & & & & & & & & & & & & &	318 372 316	8528	15 14 17	2888	2882	200	2552	24-71	7-1	086	තියන	400

	9-10	262
	-00	908
4 1-4	8	254
4 1-10 0 1-4 1-4	-878	433
4 50	55 co ==	889
21-12	911018	1,128
చె ం ర్య	877.4	1,627
18 19 12	8884	2,352
8228	శిక్రప ం	3, 333
3 228	234°	4,841
6888	2322	7,059
3254 3	88559	9,779
82214	4 2218	13,210
448 160 218 218	£2250	45,300
Wabsah Waren Wardio Wardio	Wayne Wolls Whitey	Grand total.

TABLE B-Continued.

Births, Number of Children Born to Euch Mother, Grouped Ages of Parents, Still, Plurality and Illegitmate Births, Year Ending December 31, 1906.

	births.	Males. Females.	200 201 201 201 201 201 201 201 201 201	40000	64 O 4	8 6
	-		400 :0	<u>-</u>	~ ~ ~ ~ ~ ~	
3	births.	Females.				
ā 	₹ ⊼ 	Malos.				%
Ę	≜ .4	Females	ಸಿರಿಸಚಿಚ	50004	4 24	∞ 4€
ē	birth	Malos.	99800	0 000⊣4	ro 47 ro	7-0
	Reported.	Mothers	200	-3-8°	- m	-69
	Not Re	Fathers.	~~	*2112	8 91	41-0
£	58 39.	Fathers.	-		-	
	36	Fathers.		8	81-00 -	61 4
	8	Mothers.	64 64 4			
ė	50 to	Fathers.	°28 =	101-1-104	8===	2 22
PAREN	93	Mothers.	ន្តដន្តដន្ត	4×588	88888	2∞2
TO SEED	50 to 5	Fathers.	\$235£	22328	28222	823
GROUPED AGES OF PARENTS.	30 to 40.	Mothers.	2112588	51. 52. 83. 81.	108 210 210 88	117 60 718
5		Fathers.	3559821 88821	116 120 151 166	25±82	383
		Mothers	288 283 190 190 190 190 190 190 190 190 190 190	198 1982 1982 251 251 251	25 26 26 26 27 28 28 27	86150 86150 86150
	20 to 30.	Fathers.	222 107 188 188	167 137 178 178	215 525 527 527	888
	8	Mothera	28228	85848	34232	883
	Under 20.	Fathers	86411	21112	01 & % & ±	gon
_ '-	COUNTIES.		dams llen Sartholomew Slackford	Boone Brown Carroll Case Clark	Clay Clinton. Crawford. Daviese	oostur skalb skaware

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25228	158 1672 168 158	1130	28582	80 80 80 87 87	1,388 1,368 142 142 142 143 143 143 143 143 143 143 143 143 143	22522	83223
38 888	25.5 25.5 25.5 25.5 25.5 25.5 25.5 25.5	ដូងនុះដ	8 6883	25 25 25 25 25 25 25 25 25 25 25 25 25 2	88358	81382	28 28 28 28
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25583 	2805 2805 100 100	165 156 250 213 315	28888	######################################	222 222 1.973 187	123 137 137 137	ទន្លឹងខន្ល
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Illegitimate births.		Females.	10-t10		N4	7	707
	Had File	Males.	N = ⊕	·c 00	88	& & &	888
Plurality births.		Females.	70 m 4		4000	97	308
		Males.	10-10-4	מושמים	80 m	GB (N) 00 00	22 0
Btill- births.		Females.	ლ ლ	6161 4	~	90°	228
		Malcs.	444	402-4	8 -	& & & & & & & & & & & & & & & & & & &	848
ported.		Mothers.	2 7 1	2002	888	8 417	48-
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GROUPED AGES OF PARRIES.	8 56 .0	Fathers	M — M		:	84 - 84 -	HH614
	50 to 60.	Mothers.					, 00
		Fathers.	39120	8 8 8	M000H	224220	-458
	20 to 30. 30 to 40. 40 to 50.	Mothers.	52888	25 S 21	920g	881186	∞8~2
TO SEED OF		Fathers.	84828	285 3	22222	22223	 공 성 수답
(GMALLO		Mothers.	88888 <u>8</u>	E = 3	82728	22.25.28 22.25.28	416 416 416
ō		Fathers.	85825 858	252 11	852347	05 88 82 81 11	\$25 \$25 \$25 \$25 \$25
		Mothers.	157 217 121 257	* # # # # # # # # # # # # # # # # # # #	781 111 124 127 137 137 137 137 137 137 137 137 137 13	987 168 231 197	2525
		Fathers.	22222	802 128 128	88 88 88 88	255 250 167	825
	8	Mothers	¥#384	47 87 83	88 8 1 1 2 8	120 120 120 120 120 120 120 120 120 120	167 167
	Under 20.	Fathera	F41080		88-88	5-440	844
. COUNTIES.			Parke Perry Pike. Porter Poesy	Pulsaki Putnam Randolph Ripley Rush	Scott. Shelby. Spencer Starke. Steuben.	St. Joseph Sullivan Switserland Tippecanoe Tipton	Union Vanderburgh Vermillion Vigo

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3087	\$528c	1 2, 121
2228	8487	5,891
28.72	238 141 31	12,894
2328	28 169 37	16, 386
28 29 20 21 15 115	8888	24, 168
25.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	330 179 179 59	19,608
22 22 23 23 23 160 101	46 330 59 188 39 179 14 59	4,795 19,608
		648 4,795 19,608

TABLE C.

Marriages by Months, Color and Nationality, Year Ending December 31, 1906.

		Total	2882 2883 2883 2883 2883	25 25 25 25 25 25 25 25 25 25 25 25 25 2	387288	22224
	Not Reported.	Brides	=0		-2-	47
	Rep	Этоота.	64		10	
Œ.	ij	Brides	## 4°	•	8 15	1 8 17
NATIONALITY.	For	Grooms.	114 124 124 124 124 124 124 124 124 124		37	21,713
'N	American.	Brides	929 2015 102 2015	22 22 22 25 25 25 25 25 25	255255 25525	2282 3
	Ame	.вшоопъ.	8154 8124 8138 8138 8138 8138 8138 8138 8138 813	220 137 318 573	235 235 235 216	822833
-	4	Colored.	∞ 4∺4	es :85		6 2 -
	Cotor	White.	55.25.2	22 25 25 25 25 25 25 25 25	238 171 286 216 216	8128 824 824 825 834 834 834 834 834 834 834 834 834 834
		December.	288887	8°≒≅ 3	8225°	2887.3
		Мочетрет.	23 14 17 18 18 18 18	84082	22822	28832
		October.	ది శే బేజ.	8°°28E	22823	788.8
		September	2487-4 248-4	% 52%	4425	28858
		Auguat	775°21	20 m 22	85555	200 E E E
		.vlut	72220	22,000	97482	92228 80
	1905.	.eaul	8532E	20022	8228	2222
		.ХаД	5 4800	∞4∞న్లో	22.822	44888
l		April.	488 22	80E84	\$ ####	45888
		March.	83525	92554	88282	45 a 25 7
<u> </u>		Гергиялу.	22232	5∞=8%	82228	88228
		.vannal	88820	37=3E	111182	44618
!		COUNTIES	Adams Allen Bartholomew Benton Blackford	Boone. Brown. Carroll. Cass.	Glay Clinton Grawford Dayless Dearborn	Decatur Dekaib Delaware Dubois Elkhari

28 128 168 168	261 261 196	25 25 25 25 25 25 25	25 27 14 14 14 14	1 288 880 1 288 880 1 288 1 2 1 2	258 258 700 2,571 198	22222 22222	88 2.4 88
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88588	256 194 194 194	21.12 25.25 25 25.25 25 25 25 25 25 25 25 25 25 25 25 25 2	240 274 240 138	278 278 276 126 617	2 22 22 22 22 22 22 22 22 22 22 22 22 2	28888 2088 2088 2088 2088 2088 2088 208	28 171 24 138
~×3	22 :01 21 :01	N900	w 104 4	r-4 : 15	1 24 1	=======================================	
48 5488	25.28.29 25.28.29	25.25.25 25.25 25.25 25.25 25.25 25.25 25.25 25.25 25.25 25.25 25.25 25.25 25.25 25.25 25.25 25.25 25.	8 52288	**************************************	88888 8888	26332	2848E
2887	128821	*#####################################	జాబికి	2252	28282	2582°	٠ <u>ౙ</u> ౘౢ
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2222	82182	 14832	25 91 15 15 91	828°7	28282	28888	∞ 24∞21
7222	88388	3-22	712188	88888	82522	28228	~84 ≈ 1
	22222	===	8-220	34882	<u> </u>	8888 4	စ ည်းမထတ
2402	4888	~5788	78243	, 282,45	%342 %3	22,999	44655
	22222	22888	22.822.0	2222	82587	22222	17.8
_ 1800 100	58173	 202 201	8.585	∞ 5 52∞3	828 2 2	జజభాయ	
84222	33523		84883	22838		-8255	∞8~¥≅
-4558	22883	4878Z	27 28 27	37820	23.55.50	28224	0000000
82427 1724	882288	72780	8=824	64462	ដឋងឱ្ឋឧ	2858 3	800000
~8×25	258853	21.0.12	82282	23 25 26 27 27 27 27 27 27 27 27 27 27 27 27 27	25452	91899	6 1488
Fayette Floyd Foundain Franklin Fulton	Gibeon. Grant. Greene. Hamilton. Hancock.	Harrison Hendricks Henry Howard Huntington	Jackson Jasper Jay Jefferson Jennings	Johnson. Knox. Kosciusko Lagrange. Lake.	Laporte Lawrence Madison Marion Marshall	Martin Miami Montoe Montgomery Morgan	Newton Noble Obbo Orange Owen

TABLE C-Continued.

		latoT	203 143 157 227	25.22.23	8858	\$58.855. 17.58.855.	1,009 156 156 156
	rted.	Brides	7	88	2		***
	Not Reported.	Стоота.	-	158	61	84	7 28
E	<u></u>	Brides.	2 80	N	- 8	81 81	\$22
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2	4	Brides.	85812	888 83	262 214 57 150	32 28 25 25 25 25 25 25 25 25 25 25 25 25 25	±88888 88888
	American	Grooma.	188 188 187 72	28 58 28 51	263 214 53 158	2 4 285	2528 2528
		Colorad.	11 13	O1 60		6 : 6	25.22
	Color	White	25355	281 281 158 147	88888	17.88 8.87 17.1	4 58
		December.	26 72	22,522	2332	34237	452E
		лефтой ј	25288	128-4	27872	28°28	25.28 25.28
		October.	81178	2222	22222	88485	~===== ~==============================
[' 		deptember.	18 10 16	7 2821	829E9	85-78	~~~~~~ ~~~~~~
		August.	82228	25201	247.50	88285	4282
i		·yluf	87222			88625	
	1905	.eaul	21276	72822	~2222 *		-821
		.VaM				825.88 g	
	•	April.	8-355			* 5825	
		March	27.3 7.2	20 111 7	-8223		-388
		February	#2525	2111 2111 15			→ 2=2
ļ		.v.aunaal	1233116			***	
		COUNTIES.	Parke Perry Pike Porter Posey	Pulask Putnam Randolph Ripley Rush	Scott. Shelby Spencer Starke. Steuben.	St. Joseph. Sullivan. Switzerland Tippecanoe	Union Vanderburg Vermillion

266 161 161 161	252 252 252 253 253 253 253 253 253 253	26, 225
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60 to	8 : : :	222
2883 2883 2983 2983 2983 2983 2983 2983	265 110 110	25, 398
2023	188 2	2,495
8/-82	#82	2,587
8433	327	2,762
52898	4 252	2,286
4027	క్షిచ్చా	1,987
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16 10 10	223	2,366
7712	2×02	1,675
4°21′	22,2	2,064
3.03	8843	1,870
ឌ៤೫೪	12119	1,996
25.83	1232	2,054
Wabash Warrick Washington	Wayne Wells White Whitley	Grand Total

TABLE D.

Marriages, Grouped Ages, for the Year Ending December 31, 1906.

	Total.	201 245 106 166	220 138 317 582	353 316 171 235 218	52524	282388
ž. Žį	Brides.	88	8 :	-	-0 4-	e4
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to 70.	Brides.	0,00=	0	(Paperson		a
8	Grooms.	77 8	പര വ		24 × 25	
8	Видев	o.4 ⊌	Ö-480	40000		ുഗയ⊶4
8	.вшоопр	16 1 8	7			90041
	Brides.	4. 2	7.29 213	::04:00	40%0%	25005
40 to	Этоотв.	7 3 11, 01	5 c c 2 2 3	72222 72222	8-870	~8~27
3 .	Brides.	25822	84=36	នងឧឧឌ	88822	418 9112
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Connersville	-
Converse	
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Hardinsburg	
Hartford City	
Hartsville	
Hazleton	
Hebron	
Hensler	
Hillsboro	
Hope	
Hudson	
Huntingburg	
Huntington	
Hobart	
Indianapolis	202
Ingalls	202
Jamestown	
Jasper	
Jeffersonville	
Jonesville	
Kendallville	
Kentland	

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Kewanna	
Kirklin	
Knightstown	
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Ladoga	
Lafayette	
Lagrange	
Lapel	
Laporte	
Laurel	
Lawrenceburg	
Leavenworth	
Lebanon	
Leesburg	
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Liberty Center	
Ligonier	
Linden	
Linton	
Livonia	
Logansport	
Loogootee	204
Lowell	197
Lynn	216
Lyons	181
Macy	204
Madison	19 0
Marengo	167
Marion	180
Markle	187
Martinsville	207
Mauckport	183
Mentone	193
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Middlebury	175
Middletown	185
Milford	193
Millersburg	175
Millhausen	169
Milltown	
Milton	
Mishawaka	
Mitchell	
Monon	
Monroeville	
Monterey	
Montgomery	

Pag	;(
Monticello	
Montpelier 16	0
Moores Hill	8
Mooresville 20	
Morocco 20	
Morristown	
Mount Ayr	
Mount Carmel	
Mount Vernon	
Muncle 17	1
Nappanee 17	5
Nashville 16	2
New Augusta 20	3
New Carlisle	
New Castle	
New Harmony	
New Middletown	
New Pekin 22	
Newport 22	
New Ross 20	7
Noblesville 18	3
North Judson	2
North Liberty	0
North Manchester 22	
North Salem	
North Vernon	
Oakland City	
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Orleans 21	1
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Otterbein 15	8
Owensville 17	9
Oxford 150	8
Paoli	
Paragon 20	
Parker	
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Pendleton	
Perkinsville 202	
Peru 20	
Petersburg	3
Pierceton	3
Plainfield 18	
Plymouth 20	
Poneto	
Portland 19	

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Poseyville	
Princeton 17	
Redkey 19	
Remington 18	39
Rensselaer	39
Richmond	30
Ridgeville 21	
Rising Sun 21	
River Park 22	
Roachdale	
Roann	
Roanoke	
Rochester	
Rockport	
Rockville	
Rosedale	
Rossville	
Rushville	
Russellville	
Saint Joe	-
Saint Meinrad	-
Salem	
Scottsburg	
Sellersburg 16	
Selma	
Seymour	
Shelburn	
Shelbyville	19
Sheridan	33
Shoals	14
Silver Lake 19)3
South Bend	20
Southport)3
South Whitley 23	2
Spencer	2
Staunton 16	86
Sullivan	
Summitville 20	_
Tell City	
Terre Haute	-
Thorntown	-
Tipton	
Tremont	
Troy	_
Union City	
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Upland	
Valparaiso	
Vernon	
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Village 2	20
Vincennes 1	91
Wabash 2	27
Walkerton 2	20
Wallace 1	76
Warsaw 1	.93
Washington 1	68
Waterloo 1	69
Waveland 2	07
Waynetown 2	:07
West Baden 2	11
Westfield 1	83
West Lafayette 2	23
West Lebanon 2	28
Westport 1	.69
Westville 1	98
Whitewater 2	30
Whiting 1	97
Winchester 2	16
Windfall 2	25
Wingate 2	07
Winslow 2	13
Wolcott 2	32
Wolcottville 1	95
Worthington 1	81
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